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THE

BIRMINGHAM

MEDICAL REVIEW:

A MONTHLY JOURNAL
OF
THE MEDICAL SCIENCES.

EDITED BY
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The subject of uterine inertia and its treatment is one which appeals forcibly to all those who have to attend cases of midwifery, and they constitute the large majority of the medical profession; the subject is one also which has occupied the attention of medical writers from earliest recorded times; thus Hippocrates, who wrote 460 years before the Christian era, in his first book of the Diseases of Women, says:—"If the child presents fair, and is not easily delivered, sternutatories should be administered, and the patient should stop her mouth and nose that they may operate the more effectually. She must also be shaken in this manner: Let her be fastened to the bed by a broad band crossing her breast, her legs being bended to the lower part of the bed, the other end of which must be elevated by two assistants, who gently shake her by intervals until her pains expel the child."

As regards the treatment of inertia in the third stage, he says:—"If the secundines come not away easily, the child must be left hanging to them and the woman seated on a high stool, that the fœtus by its weight may drag them along, and lest this should be too suddenly effected the child may be laid on two bladders filled with water and covered with wool, the bladders being pricked; as the water evacuates they will subside, and the child sinking gradually will gently draw the secundines away, but should the navel string be broken proper weights must be tied to it in order to answer the same purpose."

Such gentle methods might well have been more adhered to in later times.

I regret that there is not time to quote from other ancient writers, as they give directions for the treatment of uterine inertia which are both amusing and instructive.

The subject may be considered by arranging it under the following headings:—In the first stage of labour; in the second stage of labour; in the third stage of labour. In connection with the first stage it will be convenient to make a further subdivision, according as to whether treatment is required before or after rupture of the membranes. In the first stage, before the membranes have ruptured it is seldom necessary to adopt active treatment. Here the great essential is to have patience, or to treat the patient with what some of the ancient writers called Tincture of Time. If treatment is required one should endeavour to discover, if possible, the cause of the inefficient uterine action. Easily removable causes which should always be borne in mind are full bladder and full rectum, and the beneficial effect of a good enema is often very marked.

In other cases the pains begin with vigour, but soon fall off owing to the uterus becoming fatigued, and again in others the pains are felt so acutely, and this is especially the case in highly strung nervous women, that inhibition takes place and they stop altogether for a time. In either of these cases the best treatment is to administer a sedative or analgesic, the best drugs for this purpose being chloral in 15 gr. doses, or tinct. opii in doses of 10 to 15 minims. As regards external friction it should be used with caution, and should be avoided in those cases where there is reason to think that the uterus is in a state of exhaustion.

I may here refer to the various drugs which have, or are supposed to have, an effect on the uterus—the so-called oxytoxics; the principal one of these is ergot. I think it will be generally agreed that this drug should never be given in the first stage, and only with great care, if at all, in the second stage. Personally I make a rule of never giving ergot before the child is born.

Quinine is a drug which for this purpose does not appear to be very much used. I was induced to try it by an article by a foreign obstetrician, an abstract of whose paper on the matter was published in the supplement to the *British Medical Journal* about twelve months ago, and its effect in the first case in which I made use of it was so striking that I may be pardoned for quoting the case.

The patient, when about four months pregnant, had pains and hæmorrhage. The os dilated so that the finger could with difficulty be partly passed through it, and the membranes appeared to have been ruptured. In this condition the patient remained for three days, when the discharge became slightly offensive and some rise of temperature occurred. I then arranged to give an anæsthetic and clear out the uterus, but as the patient dreaded the operation I thought I would first try quinine. I ordered her three powders of 5 gr. each, to be taken at intervals of two hours. Immediately after the second dose strong uterine action set in, and the ovum was expelled before the last powder became due. I have tried quinine since in other cases, and though I have had no such striking result as this, still I am firmly convinced that it is a very valuable oxytoxic. I hope that if any of my hearers have made use of quinine in the same way they will narrate their experiences.

Some of the most marked cases of uterine inertia that I have seen have been in poor women in the cliniques of the Queen's Hospital and the Birmingham Lying-in Charity, and have appeared to me to be due to want of sufficient food, and in these a stimulant, such as a cup of beef tea or hot milk with brandy, produces a marked effect.

Long-continued delay in the first stage will sometimes produce serious symptoms, and I have seen some remarkable cases of delay at this stage in which serious symptoms arose, probably through loss of sleep, inability to take food, and the mental effect of the prolongation of labour. In one case, a hospital patient, the os remained open to the size of a florin for eight days, with no further progress. In another case, which I saw in consultation, a similar condition persisted for five days, and in one of my own private patients for six days. Each of these cases I treated by the performance of bipolar podalic version, with careful gradual extraction, and what was especially striking was, that, although the uterus was absolutely flaccid at the time of commencing version, so that the operation was easy, yet it contracted in each case extremely well after the child was delivered, and there was not the least tendency to post partum hæmorrhage, thus contrasting favourably with one's experience of forceps under similar conditions, it seems to me that the manipulations incidental to the operation of version act as an efficient uterine stimulant.

Since writing the above I have seen a similar case with Dr. Llewellyn Thomas, of Spring Hill, and with his permission will briefly narrate the particulars. The patient, a primapara, æt. 37, had been in labour five days, and had been under the constant care of Dr. Thomas during that time; in fact, for three successive nights he had been called up twice in each night. She had had very little sleep or food, and was quite worn out; shortly before I saw her she had fainted twice. The os just admitted two fingers, membranes intact, head presenting. Dr. Thomas administered chloroform and I performed version by the internal method, as the membranes broke during the introduction of the hand. Extraction was carefully performed under the anæsthetic without any perceptible laceration of the soft parts. The placenta came away without any difficulty, and the puerperium was normal.

In actual practice the treatment of uterine inertia in the first stage after rupture of the membranes in most cases resolves itself into the treament of rigid os. For this condition innumerable methods of treatment have been suggested, and time will not permit me to discuss them in detail, but I may say that the more one sees of such cases the more one is inclined to avoid active treatment and to exercise patience, and what a grand field for the exercise of this virtue is here presented. I may say here, in parenthesis, that I have often been asked by medical friends why it is that obstetricians so frequently acquire rotundity of form, and after thinking over the matter I have come to the conclusion that it must be owing to the habit of patient resignation acquired in the treatment of rigid os. When active treatment of the rigidity appears necessary I prefer digital dilatation under anæsthesia to any other method.

There can be no doubt that far too often forceps are applied with the undilated os, and one should sometimes rather sympathise with than blame the practitioner, especially if he be young. He has on the one side the patient and her friends begging of him to do something to deliver the woman at once, and the consciousness that if anything goes wrong during the puerperium he will be blamed because he allowed the child to be so long in the birth. He has also on this side his own desire to terminate the labour and secure well-earned rest, and on the opposite side he has his own conscientious conviction that interference at this stage is not the right thing, and that it will be better for the patient to wait for further dilatation of the os before applying forceps.

In the second stage inertia is not so common, but in primaparæ one fairly often sees cases in which the pains and the progress go on satisfactorily until the head reaches the perinæum, and then, owing to a disproportion between the pains and the resistances, it is very difficult to say which is at fault, most aggravating delay may occur. It has often struck me that this condition is due to the fact that the civilised woman adopts a more or less recumbent attitude for this stage of labour, and that the natural position, and the one usually assumed by women of uncivilised nations, is the squatting one, as in defæcation; in this position gravity aids the advance of the head, and the bearing down efforts can be made with much more vigour. As illustrating this I may point to the fact that many patients when confined to bed find it almost impossible to defæcate in a bed-pan when lying on their back, but when allowed to use the chair have no difficulty; and I may say here in passing that I think doctors and nurses are frequently too particular in forbidding patients to get gently out of bed to use a commode, and I have seen some most troublesome accumutions in the rectum from this cause. I have never yet ventured to put into practice this theory as to the squatting position, but I make the suggestion, and perhaps some bolder than myself in defying the conventions may carry it out.

For delay in the second stage one need not hesitate long before resorting to forceps, and needless delay in resorting to their use at this stage is as blameworthy as too great haste to use them in the first stage. With respect to the much debated question of forceps and lacerations of the perinæum, my own firm belief is that by the careful use of the forceps, keeping the head well up towards the pubes, the perinæum may be saved when otherwise it would have ruptured, and many of the worst cases of perinæal tear that I have seen have been in unassisted labours.

In the third stage of labour inertia of the uterus is inevitably associated with post partum hæmorrhage, and its treatment is the treatment for that condition. All our efforts here are directed towards securing contraction of the uterus with the least possible delay, but before entering upon this we may say a word or two as to the prophylaxis of this condition. Care must be especially exercised in securing due contraction of the uterus after the birth of the child, especially when the labour has been very prolonged, the uterus distended excessively as by twins, or the child extracted with forceps; and the danger is greater if extraction has been delayed until the uterus is thoroughly exhausted. My own opinion is that chloroform predisposes to post partum hæmorrhage, and most of the troublesome cases I have seen have been in primaparæ, whom it has been necessary to deliver under chloroform by means of forceps.

Now as to the treatment. It is very important to know what to do at once, and not to be undecided between two or three methods of treatment. The rule by which I am guided, and which I teach to students, is to do the three following things, in the order named :—1, Grasp the uterus with the left hand; 2, Pass the right hand into the uterus to remove placenta, clots, etc.; 3, Inject hot water. Grasping and kneading the uterus will by itself be sufficient in most cases to induce contraction and arrest the hæmorrhage, but if it is not quickly successful the second manœuvre should be added, and after clots have been extracted the two hands can act together in bimanually compressing the uterus, and in the meantime the hot water can be got ready.

As an accessory means of securing contraction, a hypodermic injection of ergotin is useful, but time should not be wasted over this to the neglect of the other means mentioned. A dose of liquid extract of ergot may always be given by a bystander with advantage. I believe that very few cases of uterine inertia in the third stage will be found not to yield to these methods. I have never yet had a case in which I did not succeed in securing contraction and avoiding a fatal result by following out this line of treatment.

I trust that this necessarily somewhat cursory account of the means to be used in treating uterine inertia in the different stages of labour may be productive of a good discussion, and I would especially like to hear the opinion of members on quinine as an oxytoxic, and on podalic version as a treatment for some cases of inertia.

ABCÈS DU CERVEAU SITUÉ DANS LE LOBE PARIÉTAL DE L'HÉMISPHÈRE DROIT.

OBSERVATION CLINIQUE RECUEILLÉE

PAR S. V. WECHSLER, ETUDIANT, TASSY.

L'ADAGE, la clinique étudie *le malade*, la pathologie *la maladie*, y trouve sa place. L'observation d'un malade dont les divers symptômes morbides se succèdent sous nos yeux vaut mieux que les possibilités de telle ou telle complication donnée théoretiquement sous un chapitre de la pathologie. Fidèle à ces idées j'y donne l'observation d'un malade qui a succombé le 20 Mars dans le service de notre clinique médicale à la suite d'un abcès assez volumineux situé dans le lobe pariétal de

l'hémisphère droit du cerveau, lobe qui correspond à peu près aux circonvolutions centrales, et dont le diagnostic a pu être fait *in vivo.* L'abcès contenait du vrai pus, "pus bonum et laudibile" des vieux chirurgiens.

J'y donne plus bas la topographie exacte de l'abcès.

Voici en quelques mots l'histoire de la maladie de cet individu :—

Le nommé Neculai Fátre, 32 ans, entre à l'hospital le 2 Janvier, 1898, avec les symptômes de Bronchiectasie. En effet nous trouvons le même jour le malade dans le suivant état: Pour commencer il nous raconte qu'il tousse dépuis le mois Juin ou Juillet a peu près ; qu'il a eu souvent la fièvre, la respiration courte, un point de côté à droite, et que dépuis cette époque il ne peut guère rester couché sur ce dernier côté. Il accuse en dehors de ces lésions, depuis quelques mois surtout, une expectoration fétide, plus abundante le matin, mais qui diminue de quantité pendant la journée. Le malade de constitution moyenne, un peu amaigri, présente à l'examen physique des organes respiratoires une sonorité pulmonaire éxagérée du côté gauche à la partie antérieure; par la percussion, au sommet droit et postérieur, l'on constate que la resonnance est plus écourtée, tandis qu'à partir du milieu de l'omoplate et jusqu'à la base, il existe de la matité.

L'expiration, du côté gauche et antérieur, est exagerée et prolongée, à droit quelque râles sous-crepitant humides. Au sommet droit et postérieur le murmur vésiculaire diminue d'intensité, manque à peu près complétement depuis l'omoplate et jusqu'en bas. La température et le pouls normaux. Les crachats expectorés en grande quantité, sont muco-purulents, légèrement spumeux à odeur fétide rappelant les os en macération. Quelques améliorations succèdent jusqu'au mois de Mars. La nuit du 2 au 3 Mars a été très pénible pour notre patient, il respirait difficilement, suffoquait même, a toussé, et craché un litre à peu près d'un liquide purulent et sanguinolent, qui se divisa en trois couches. Une supérieure spumeuse et sanguinolente, une moyenne rouge-brune mais plus transparente, et une troisième plus homogène, épaisse jaunâtre, consistante, et occupant le fond du crachoir. L'examen microscopique de ces masses expectorées, a demontré l'existence de globules de pus, de sang, de fibres élastiques, de détritus molléculaire, de mucosités, de bactéries communes, mais pas le bacille de Koch.

La matité disparue à la partie postérieure et à la base, est remplacée par un son plus clair; à l'auscultation on entendait de gros râles humides.

La respiration est plus libre, le malade peut rester couché sur le côte gauche.

Dans la nuit du 4 au 5 Mars, le malade est de nouveau pris d'un accès de toux suffocante, il expectore beaucoup, quoique moins que lors de son premier accès, mais les crachats sont plus sanguinolents. La zone de matité de la base du poumon droit persiste.

Dans la nuit du 14 au 15 Mars nouvelle expectoration abondante, le malade a craché environ deux crachoirs pleins de pus mêlé à du sang. Le patient se trouve un peu moins oppressé.

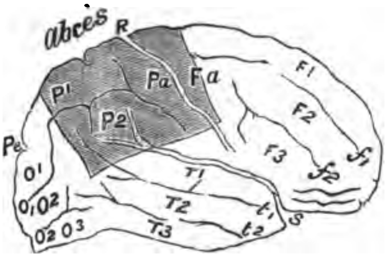
Dans la nuit du 16 Mars, le malade eut *trois violents accès épileptiformes*, suivis d'une hémiplégie gauche très prononcée.

Les contractures cloniques, interessaient paraît-il surtout les muscles de la face et des membres du côté gauche; l'intelligence intacte. Pouls 76, Temper. 36·8. La temper. dans la journée du 17 Mars, était égale à 38·2, et demeure pendant les jours suivants, les 18 et 19 Mars au même degré à peu près, pour tomber dans la soirée du 19 au dessous de la normale; le malade meurt le 20 Mars, après avoir eu, pendant la journée du 19, plusieurs accès épileptiformes, mais d'intensité moindre que les premiers; l'hémiplégie est devenue plus complète à la suite du collapsus. À l'autopsie faite en presence de notre chef, nous avons trouvé une splénisation presque totale du poumon droit quelques cavernes bronchiectasiques dans le lobe inférieur, de très fortes adhérences entre la plèvre costale et pulmonaire, à la base la poche d'une vomique pleurale vide. Le poumon gauche emphysémateux.

À l'ouverture de la cavité crânienne, nous avons trouvé un gros abcès dans la région mentionnée, la substance cérébale *effacée*; et la pie-mère un peu adhérente, le liquide cephalo-rachidien peu abondant. L'abcès enkysté contenait du pus vert et sanieux, à l'odeur fétide. Quant à la paroi de l'abcès; c'etait une membrane très mince formée de tissue nevroglique.

Il résulte de cet examen que notre diagnostic à été bien confirmé.

TOPOGRAPHIE DE L'ABCÈS DU CERVEAU.



Face externe de l'hémisphére droit.

Quant à l'explication de l'evolution il nous reste encore quelques mots à dire. Certes nous n'avons point à nous occuper ici de causes traumatiques qui ont pu détérminer l'abcès, ni lesions du voisinage comme : carie du rocher et des sinus frontaux, de la voûte de l'orbite, suppuration otique qui sont très frequentes.

C'est la bronchiectasie et la bronchite fétide qui doivent nous occuper.

Quoique signalée par *Abercrombie*, decrite par *Virchow* (1853), la complication de l'abcès cérébral dans la bronchite chronique, n'a été établie que par le Prof. *Biermer* et son élève *Meyer* qui ont reconnu le rôle des affections du poumon dans l'étiologie des abcès cérébraux Quant au mécanisme pathogénique on l'explique aujourd'hui par la pénétration des micro-organisme dans les voies sanguines justement au niveau des foyers pulmonaires; c'est à dire comme chez notre malade par une embolie provenant d'un foyer sanieux purulent. Il est plus facile à l'expliquer quand la pyohémie est certaine; mais, comme dans

notre cas, je le dis, et je le répète, il n'était point des phénomènes pyohémiques, la chose devient plus rude.

Sur ce fait voici comme s'exprime *Brissaud.** "On n'est guère autorisé à donner la plus timide explication de la formation de ces abcès dans l'hémisphère, *en dehors des cas où la pyohémie est certaine.* Pourquoi la susceptibilité spéciale du cerveau? On l'ignore."

Mais chose importante, et sur laquelle je veux spécialement attirer l'attention, est le retardement de se montrer les phénomènes cérébrales. En effet cinq jours à peine avant sa mort le malade a eu les accès epileptiformes et l'hémiplégie, et à l'autopsie l'on trouve une collection purulente assez grande, et une membrane de tissue nevroglique; collection et membrane qui bien sûre ont mis plus de cinq jours pour se former, et cependant le malade ne présentait aucun phenomène cérébral, qui n'ont apparu probablement que lorsque le pus s'est trouvé tout près de l'écorce cérébrale en appuyant de bas en haut et en déterminant une paralysie du côté opposé.

THE TREATMENT OF PUERPERAL FEVER.†

BY CHRISTOPHER MARTIN, M.B. EDIN., F.R.C.S. ENG.
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UNDER the term "Puerperal Fever" are included numerous inflammatory lesions in the pelvis, with varying degrees of blood-poisoning, occurring during the puerperium, and due to infection of the genital canal by certain micro-organisms. In this paper I propose to briefly consider those methods of treatment which I have tested by personal experience and which I have found efficacious.

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* Traité de Médecine. Charcot, Bouchard, Brissaud.

† A Paper read before the Queen's College Medical Society, Birmingham, on November 23rd, 1898.

On being called to a case of puerperal fever the surgeon's first duty is to make a careful bimanual examination of the pelvis in order to ascertain, if possible, the extent and severity of the local inflammation. He is rather apt to shirk this examination because of the danger of infecting his hands and so carrying the poison to other cases. It is however necessary in order to treat the case rationally and scientifically. Not only must he diagnose and treat the local pelvic lesion, but he must also gauge the amount of and actively combat the systemic toxæmia that accompanies it.

What then are the lesions in the pelvis and abdomen which he must look out for? (1) Endometritis and metritis. (2) Salpingitis, pyosalpinx, ovarian abscess. (3) Pelvic cellulitis, abscess of the broad ligament. (4) Peritonitis, localised in the pelvis, or general.

Let us first consider the treatment of these local pelvic lesions.

Endometritis.—This is the commonest lesion occurring in cases of puerperal fever. Indeed there are probably few cases which do not begin with an infective inflammation of the lining of the uterus. It is mainly characterised by (1) a tender swollen uterus; (2) offensive lochial discharge; (3) symptoms of sapræmia or septicæmia. Unless, however, there be peri-uterine inflammation, the uterus is not fixed and no bulging mass is felt either behind or on either side of the womb. The septic symptoms vary greatly in severity.

The surgeon should at once thoroughly scrape out and disinfect the uterine cavity. The patient should be placed in Sims' left lateral position with the hips drawn well over the edge of the bed. A macintosh sheet should be placed under them and carried over the side of the bed in the form of a funnel into a pail or foot-bath. The anterior lip of the cervix should be seized with vulsella and the cervix drawn down to the vaginal outlet. The perinæum may be drawn back with a Sims' speculum. The uterus should then be cautiously curetted with a sharp curette or what is often better, a blunt flushing curette. By this means any fragments of retained placenta, membrane, or decidua, are thoroughly removed. If a flushing curette be not used, the uterus should next be irrigated by means of a double-channelled catheter. For the purpose of washing out the uterus nothing answers so well as iodine water (one drachm to the pint). Other antiseptic solutions, such as 1 in 2,000 corrosive sublimate, or 1 in 100 lysol may be used. The interior of the uterus should then be swabbed with iodised phenol applied with Playfair's probe (or one of the wooden probes which I have introduced). A long strip of iodoform gauze must next be carried up into the uterus to act as a drain, and the vagina should be lightly packed with the same material. This gauze should be left in the uterus and vagina for forty-eight hours. After this, if the febrile symptoms have subsided, nothing more is required than a hot iodine vaginal douche twice or thrice a day. If, however, the febrile symptoms continue, and especially if the discharge from the uterus continue to be offensive, the uterus should be washed out night and morning through a double-channelled catheter with iodine water.

This operation of curetting and disinfection of the uterus can easily be performed without an anæsthetic. The accompanying sapræmia or septicæmia will also require special treatment. This, however, I shall discuss presently.

Salpingitis, Pyosalpinx, and Pelvic Peritonitis.—In these cases the infection has spread into the Fallopian tube, setting up salpingitis or pyosalpinx, and through the tubes into the pelvic peritoneum, setting up a local pelvic peritonitis. In such cases, if there be evidence of a collection of fluid (sero-pus or pus) either behind the uterus (in the pouch of Douglas) or at either side of the uterus (in the Fallopian tubes) the surgeon should put the patient under chloroform and place her in the lithotomy position. The perinæum should be drawn backwards by means of Auvard's weighted ball speculum, and the vagina disinfected with 1 in 1,000 corrosive sublimate. The posterior lip of the cervix should be seized with vulsella and drawn downwards and forwards. With scissors the posterior fornix should be incised and the pouch of Douglas freely opened, when, if there be a collection of pus or sero-pus in the pouch it is easily evacuated. One or two fingers should be cautiously introduced into the pouch and the Fallopian tubes palpated. If they be found distended with fluid they should be seized with forceps, drawn down and freely incised with scissors. Strips of iodoform gauze should then be carried up so as to drain the pouch of Douglas and the suppurating tubes. The vagina should then be lightly packed with iodoform gauze, and the patient put back to bed. In addition, of course, the accompanying septicæmia requires active treatment.

Such an operation is all that is required in most cases of puerperal pelvic peritonitis. It is, however, only fair to say that in such cases certain American and Continental surgeons advocate a much more severe operation: they perform vaginal extirpation of the uterus and Fallopian tubes. I have never yet seen a case in which I have felt justified in carrying out this heroic method of treating acute puerperal pyosalpinx, and on general principles I should condemn it. These patients are not in a condition to stand a severe operation. Moreover, I think there must be a great danger of converting a localised infection into a general one, by pumping a large amount of toxic material either into the peritoneal cavity or into the general circulation.

Pelvic Cellulitis.—In some cases it will be found that the cellular tissue of one or both broad ligaments is infected and inflamed. On one or both sides of the uterus, low down in the pelvis and extending out to the lateral pelvic wall, a hard board-like mass of infiltration is felt, fixing the uterus as in a mass of plaster of Paris. If this does not suppurate, if no fluctuation can be detected in the mass on either vaginal or rectal palpation, it should not be interfered with surgically. Hot vaginal douches should be administered every six hours, and after each douche a tampon soaked in ichthyol and glycerine (10 per cent.) should be introduced into the upper part of the vagina. Should, however, it be evident, from the presence of fluctuation, the occurrence of rigors, a spiky temperature, and hectic sweats, that an abscess has formed in the broad ligament, it must be opened per vaginam. The patient having been anæsthetised, is placed in the lithotomy position. The perinæum is drawn backwards with Auvard's speculum, and the vagina disinfected. The vaginal mucous membrane is incised with scissors behind and to one or other side of the cervix. A pair of long sinus forceps is then thrust through this incision into the centre of the inflammatory mass, and, when the abscess cavity is reached, opened widely. Through the opening thus made, a rubber drainage tube or a strip of iodoform gauze is inserted. The vagina is lightly packed with gauze, and the patient put back to bed.

General Peritonitis.—The occurrence of acute general peritonitis is, of course, extremely ominous. In typical cases there is a hard drummy distension of the abdomen, constipation, vomiting, a pinched face, a dry tongue, and a quick pulse. In such cases I have found the administration of calomel by the mouth and repeated turpentine enemata of most service. Five grains of calomel should be given every six or eight hours until the bowels move freely. In some cases I have given five grains of calomel at the outset and afterwards have followed up with repeated small doses of calomel (one-tenth of a grain every hour). Many cases have been saved by a brisk calomel purge. If there be signs of free fluid in the peritoneum the question of opening the abdomen has to be considered. If on vaginal examination fluid can be felt bulging behind the uterus and distending the pouch of Douglas, the peritoneum should be opened through the posterior fornix, and an iodoform gauze or rubber drain inserted. I have in several cases of acute puerperal peritonitis opened the abdomen above the pubes, and washed out and drained the peritoneum. The prognosis is grave, as it must be remembered that there is not only a severe peritonitis, but also a severe septicæmia; and usually, even though we remove the peritonitic effusion, the patients succumb from acute blood-poisoning.

The General Treatment of Puerperal Septicæmia.—Here we have (1) to treat urgent symptoms as they arise, (2) to try and neutralise or eliminate the poison circulating in the patient's blood, and (3) to maintain the patient's strength during the process. For the treatment of high fever nothing answers so well as quinine. If the patient be vomiting it should be administered as an enema, or, better still, by hypodermic injection. If she can retain it, the drug may be given by the mouth in five grain doses, repeated every six, eight, or twelve hours, according to the severity of the fever. Quinine not only reduces the temperature, but in some way acts as an anti-toxin in the blood. In cases of hyper-pyrexia cold sponging is of great value, and should be resorted to whenever the temperature reaches 105° F. Heart failure should be combated by the administration of digitalis and strychnine, either by the mouth or hypodermically. Alcohol must be administered freely. If the patient can retain it, brandy and milk, or egg flip, should be given by the mouth. If she be vomiting, brandy and beef-tea enemata should be administered every four hours. If there be diarrhœa no attempt should be made to check it, as I believe that the poison in many cases is in this way eliminated. Should there be no diarrhœa, the bowels should be opened with calomel (five grains), followed by a saline aperient, such as sulphate of magnesia.

Within recent years a new method of combating the general blood poisoning has been introduced in the form of anti-strepto-coccus serum. This is prepared by infecting the horse with a pure culture of strepto-coccus pyogenes in repeated and increasing doses. After a course of these injections the blood of the horse becomes rich in anti-toxin. A quantity of blood is drawn from the horse's vessels, and the serum from this blood is preserved in small glass vials, each holding ten cubic centimetres. These vials can be obtained from the Pasteur Institute at Paris, the British Institute of Preventive Medicine, and from certain wholesale chemists, such as Burroughs and Wellcome. The serum is injected into the sub-cutaneous tissue of the abdominal wall with a special syringe, which is so constructed that it can easily be rendered aseptic by boiling. In ordinary cases one dose of ten cubic centimetres is administered every twenty-four hours; in severe cases it is advisable to administer it every twelve hours. Anti-strepto-coccus serum is efficacious only in those cases of puerperal fever in which the strepto coccus pyogenes is the predominant infecting agent. For example, in cases of puerperal fever, due to the influence of staphylococci, gonococci, the bacilli coli-communis, or the bacilli of diphtheria, I do not think it reasonable to expect the anti-strepto-coccus serum to prove of much value. It is, however, probable that most cases of puerperal fever are cases of mixed infection, and in the majority of these the strepto-coccus pyogenes is the predominant germ.

Lastly, the injection of saline solution in large quantities into the sub-cutaneous tissue, or the deep cellular tissue under the mamma, is undoubtedly of value. From a pint to a quart of normal saline solution (which contains roughly a drachm of common salt dissolved in a pint of boiled water) is slowly injected into the cellular tissue. This may be repeated every twelve hours. Being quickly absorbed into the blood it dilutes it, and so helps it to eliminate through the skin, kidneys, and intestinal tract any toxin it may contain.

REPORTS OF CASES.

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A CASE OF SCARLATINAL NEPHRITIS, COMPLICATED BY DOUBLE EMPYEMA.

BY E. ST. JOHN WHITEHOUSE, M.R.C.S., L.R.C.P., SOLIHULL.
LATE RESIDENT MEDICAL OFFICER CHILDREN'S HOSPITAL, BIRMINGHAM.

THE following case seems to me to be of sufficient interest to warrant its publication :—

C. L., a boy aged 4½ years, was brought to me on Oct. 18th, 1898, having had, his mother said, a feverish cold with slight sore throat nine days previously, since which he had been ailing and languid, with loss of appetite and "lumps in his neck," The boy was very anæmic, the tonsils were rather large, and the glands at the angles of the jaw were enlarged. His mother had not seen any rash. He was seen at his home three days later, when he was even more pale, puffy about the eyes and ankles, and complained of headache and pain in the back. The urine was scanty, and of a dark colour. His sister, seen at the same time, had a red throat and tongue, temperature 101°, and quick pulse, and the remains of a red rash were visible on her chest and back. She had been ailing three or four days. She was isolated, and began to peel pretty freely in about ten days' time, and was sent to the Isolation Hospital.

On examining the boy's urine it was found to contain a considerable amount of blood, a dense cloud of albumen, and many casts. The boy was sent to bed, kept warm, given a milk diet, and treated by poultices to his loins and free purgation. Under this treatment his condition improved, the amount of urine increasing and the blood diminishing, and he went on well until November 6th, when the temperature, which had previously been about 100°, ran up to 105°, breathing and pulse became quick, and the urine again became scanty. Slight dulness was detected at the base of the left lung. This rapidly increased, the increase being accompanied by bronchial breathing. In the course of a few days the other lung became involved, so that by November 11th there was well marked pneumonia at both bases, and the boy's condition began to look very grave, the temperature ranging from 102° to 104°, and the pulse-rate from 130 to 140. There was profound anæmia, and an almost entire absence of sleep. Liquid nourishment and stimulants were fairly well taken.

On November 13th Dr. J. W. Russell saw the patient in consultation with Dr. Bernays and myself, and endorsed the grave view of the condition. The patient was ordered Liq. Ferri Dialysati ♏v. T.D S., and small doses of Tinct. Opii at night to procure sleep. He remained very ill until the 21st November, when he began to show signs of improvement, temperature and pulse-rate both falling gradually and redux crepitation heard over both lungs. This improvement went on for four or five days, when the temperature again rose, accompanied by sweats and an increase in the dulness at the left base. On December 2nd the exploring needle showed the presence of pus in the left pleural cavity, and on the following day chloroform was administered and an incision made just below the angle of the scapula and midway between it and the mid-axillary line. A large quantity of pus was evacuated and a drainage tube inserted. After this there was some improvement for a few days, but not so much as might have been expected. The right base still remained somewhat full and the breath sounds bronchial. Ten days after the first operation, as there was no further improvement in the general condition and some extension upwards of the dulness at the right base, the exploring needle was put in and pus drawn off. Chloroform was again given and the right chest opened in the seventh interspace, just below and external to the angle of the scapula. A large amount of sweet pus was evacuated and a drainage tube inserted; only very slight improvement followed the operation. The boy still remained very anæmic, with persistent high temperature, rapid weak pulse, and frequent profuse sweats. There was a loud rough systolic bruit all over the precordial area, loudest at the apex, whose impulse was at the fourth space two inches outside the nipple line. Emaciation was extreme, whilst the urine still showed a dense cloud of albumen. The patient was very difficult to feed, refusing most of the nourishment ordered for him, and demanding persistently cold boiled ham and tea. To gratify his importunities these viands were allowed in minute quantities, his grandmother, to whose devoted nursing the lad owes in no small measure his ultimate recovery, managing with great tact and patience to get in small quantities of raw meat juice, milk and brandy, etc.

In this way the case went on, until early in January, 1898, the patient began to vomit each night a quantity of sour smelling undigested food and mucus, the abdomen became markedly distended, and the stomach resonance was found to extend below the level of the umbilicus. The diet was ordered to consist of small quantities of pancreatised milk, raw meat juice, and Benger's food, given frequently, whilst medicinally small doses of Acid. Nitrohydrochlor., Pepsin, and Tinct. Nuc. Vom. were given after food to assist digestion and improve the stomach tone, together with powders containing Reduced Iron and Salol, with the idea of combatting the anæmia and checking fermentation. Under this treatment there was a very gradual but steady improvement, the vomiting becoming less frequent and less sour, the stomach resonance diminishing, and the appetite improving, so that by the end of February the notes show as follows:—"Eating well and putting on flesh, less anæmia and empyema, cavities nearly healed."

On April 25th the lad was sent to Bournemouth for five weeks, and on his return my notes record—"Boy looking fat and well, a little short of breath on exertion, faint systolic bruit at apex which is in the nipple line; haze of albumen in urine, wounds quite healed and good expansion of both lungs." At the present time the boy is looking well and strong, there is no albumen in the urine and no cardiac murmur can be heard.

Remarks.—One of the most striking features of this case was the persistent high temperature, accompanied by profuse sweating; this condition, lasting as it did for nearly four months (during which time the evening temperature ranged between 101° and 103°) was suggestive of a pyæmic condition and made one apprehensive of possible collections of pus elsewhere, the more especially as during this time the empyema cavities remained sweet and the pus abundant.

Double empyema is to the best of my knowledge a rare condition, and recovery from it even more so; so that the association of extreme debility, cardiac dilatation, and the apparent cessation of all power to assimilate food which characterised this case, renders recovery the more remarkable and should serve to make one hopeful even when the prospects of a favourable issue seem most remote.

Another point of at least practical interest is, that although the case would seem to be of undoubted scarlatinal origin, (for two other children in the house developed well-marked scarlatina during the early days of the case) yet the patient, though under close observation since about the ninth day from the commencement of his illness, never showed the slightest sign of desquamation.

MEDICAL ABSTRACTS.

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DISEASES OF CHILDREN.

BY WALTER R. JORDAN, M.D.

Acute Pneumonia of Childhood.—By James Carmichael, M.D., F.R.C.P. Ed., University Clinical Lecturer on Diseases in Children; Physician, Edinburgh Royal Hospital for Sick Children. —(The *Edinburgh Medical Journal*, August. 1898).

Dr. Carmichael's object in this paper is to give a short outline, based mainly on hospital experience during late years, of acute pneumonia as met with in early life.

The earlier observers gave wonderfully accurate accounts of the symptomatology of the disease, and also described the naked eye appearance of the lungs on section, in its various forms, but, from want of pathological knowledge based on microscopical investigation, vainly tried to classify the pneumonias in different ways. The more modern division into lobar and lobular varieties, still holding good as a general and rough classification, gives no information as to the real pathological condition. In recent years microscopic and bacteriological research have much simplified our knowledge of the disease. Its infective nature has been pretty clearly established, and a new classification of the various morbid conditions met with according to present knowledge would seem to be called for. The rôle of micro-organisms in the disease is a most important one, as the toxæmia resulting from their growth would appear to be not only the main factor in the production of the constitutional symptoms (often it is well known out of all proportion to the extent of the local lesion), but in many cases the principal cause of danger to life. The frequency of cerebral symptoms is often associated with profound toxæmia : other effects of the toxin on the nervous system frequently manifest themselves, particularly on the heart centres, where rapid death may take place from heart failure. The rôle of micro-organisms is also of interest in reference to the type and duration of the disease. In pneumococcus pneumonia it is of short duration, and the crisis generally well marked.

CLASSIFICATION.

The most rational and scientific mode would appear to be that founded on the pathological anatomy and bacteriology of the disease. Quite a number of organisms are found associated with the disease—Friedländer's coccus, streptococcus, staphylococcus, Fränkel's capsuled coccus; also cases of mixed infection—pneumococcus and streptococcus; streptococcus and staphylococcus; streptococcus and capsuled coccus; pneumococcus, streptococcus, and staphylococcus; pneumococcus and capsuled coccus. Pneumococcus was the organism most frequently met with (Dürck). In cases of lobular distribution, streptococcus was usually met with alone or with pneumococcus; in lobar cases, catarrhal and fibrinous variety combined, either Fränkel's or Friedländer's coccus was generally found alone (Mosny, Netter).

In secondary pneumonias the micro-organisms are still more numerous and varied: associated with the organisms peculiar to the primary disease, others, streptococcus, staphylococcus, pneumococcus, are found, showing a mixed infection. In influenza pneumonias Pfeiffer's bacillus was always present, in most cases with other organisms (Meunier). In broncho-pneumonias of intestinal origin the presence of the *Bacterium coli commune* has been demonstrated (Sevestre, Lesage). In diphtheria pneumonias Löffler's bacillus, alone or associated with other organisms has been found (Darier); in other diseases similar results have been obtained, streptococcus being the predominating organism in most. Thus the pneumonia of infancy can in no sense be considered a specific disease, in the sense that it is due to any special organisms, similar, if not identical, pathological changes being produced in the lung tissues by various organisms. Grancher says, " whereas fibrinous pneumonia is associated almost invariably with pneumococcus, catarrhal pneumonia is produced by a great variety of infections."

PATHOLOGICAL ANATOMY.

In fibrinous pneumonia the earliest stage of simple engorgement soon passes into that of solidification, with fibrinous lymph, embryonic epithelial cells from the alveolar walls, coloured blood cells, and leucocytes filling the air cells. Grey hepatisation succeeds with commencing disappearance of the fibrinous network and fatty degeneration of leucocytes. Fibrinous pleural exudation shows itself in the second, and is most copious in the third stage. In catarrhal pneumonia the lung is not solid, but vesicular throughout. The surface shows isolated lobules, or groups of these, prominent and purplish. Pleurisy is absent, or present generally in localised areas. In section the lung is scarlet with irregular small areas of lobular consolidation of a greyish colour. The air cells are filled with mucous fluid and cellular elements (epithelial). The whole process is essentially a catarrhal one. The lobar consolidation rarely presents much variation; in the catarrhal variety the appearances are not always so typical, groups of lobules or larger areas forming more or less solidified lung. The lung then shows, in addition to the catarrhal process, more or less exudation of red and white blood cells into the alveoli and interstitial tissue.

CLINICAL TYPES.

Two principal varieties may be noted, each of which may be subdivided. Primary acute pneumonia is usually epidemic in its visitation, sporadic cases occurring at times. While it is highly probable that the disease is more or less infectious under certain circumstances, the writer has not been able in his hospital practice to obtain sufficient evidence to adduce proof of this. His experience points to the occurrence more or less frequently during pneumonia epidemics of cases of acute bronchial catarrh, without any clinical evidence of involvement of the alveoli or capillary bronchi. Clinically such cases showed sibilant rhonchi and crepitant râles in the larger and medium tubes, temperature seldom rising above 103°, the cases generally ending by crisis or rapid lysis in a week or ten days, and speedy convalescence. None of the cases ending fatally, and no expectoration being procurable, the nature of the organisms causing the disease could not be determined.

Fibrinous Pneumonia.—This form shows two well-marked varieties. In both pleurisy is generally distributed; in the first, with a scanty pleural exudate, the typical signs of lobar pneumonia are not obscured; in the second (pleuro-pneumonia) with copious fibrinous pleural exudate, the signs of lung consolidation are obscured by those of pleural exudation, the case becomes more or less chronic in its duration, and ends by lysis. Empyema is a well-known sequel of fibrinous pneumonia in children. Fibrinous pneumonia is much less fatal than catarrhal, almost invariably primary, pursues a well-marked typical course ending in crisis at the end of a week, and is essentially a pneumococcus infection usually attacking previously healthy children. The distribution is lobar and sharply defined.

Catarrhal Pneumonia, or Broncho-pneumonia.—This form is primary or secondary with equal frequency. It is much commoner at the earlier than the later periods of child life. It is much more fatal than fibrinous pneumonia, and is insidious in onset, and of indefinite type and duration. The lesion is not sharply defined, and the physical signs of bronchial catarrh are usually present. Its duration varies from ten days to many weeks. Resolution is slow, with a tendency to chronicity, and relapses not infrequent. In chronic cases interstitial changes take place in the lung, and ultimately tuberculosis may complicate the disease. Empyema may result.

SYMPTOMS AND PHYSICAL SIGNS.

Fibrinous form.—The onset is sudden, often ushered in by vomiting in place of a rigor, more rarely a convulsion. Temperature soon reaches 103° or 104° and remains without much variation till the 5th or 7th day, when crisis takes place. Should this not occur it is a sign of further involvement or complication. The percussion note rapidly becomes impaired. At first high-pitched but distinct respiratory murmurs are heard; with complete consolidation bronchial breathing. Crepitation at the end of inspiration may be heard for a few hours only. Vocal resonance is increased. With resolution respiration becomes less bronchial, with coarse crepitant râles. Not infrequently the signs were delayed and out of all proportion to the constitutional symptoms.

Catarrhal form.—As to the question why a similar infection should produce in an infant a catarrhal pneumonia and in a child over five or an adult a fibrinous pneumonia, it is shown that the anatomical conditions of the infantile lung explain the pathological conditions produced by disease, the greater vascularity of the alveolar walls and the abundance of their epithelial contents, the immature nature of the cells, and also the cellular elements of the interstitial connective tissue, forming a group of anatomical conditions possessing less immunity to the infective process than any other portion of the lung tissue.

There are three pretty distinct varieties of this form—(*a*) those without signs of consolidation, (*b*) with small areas of consolidation (lobular distribution), (*c*) with large areas of consolidation (lobar distribution).

Symptoms.—These show a marked similarity in all the varieties, and permit a tolerably certain diagnosis without the aid of physical signs. There is more or less respiratory embarrassment, and probably cyanosis; the alæ nasi are in active motion; there is more movement of the chest walls than is normal in the young child, with more or less inspiratory retraction at the lateral bases and diaphragmatic insertion. The temperature, of an irregular type, ranges from 102° to 104° or higher.

Physical signs.—These vary infinitely. Auscultation is far more reliable than percussion in diagnosing the pneumonic areas. In the *first variety* (*a*) a pneumococcus or mixed infection of the bronchial tubes, without evidence by physical signs of implication of the air cells the signs are those of ordinary bronchitis—percussion note generally resonant, sibilant rhonchi, with coarse and fine crepitant râles more or less distributed over one or both lungs. Characteristic râles are heard during the whole of inspiration, and frequently during expiration as well, over certain areas of the lung where the alveoli are most affected. Breathing is vesicular, but often feebler than normal. Cases of this variety run an acute course, ending in lysis or rapid crisis.

In the *second variety* (*b*) auscultation detects small pneumonic areas which tend to enlarge and coalesce with other neighbouring patches. The percussion note is more or less impaired over the involved areas in proportion to their size and proximity to the surface. There is broncho-vesicular breathing, increased crying resonance, and moist sounds as in (*a*), except that in the centre of the affected areas there are sometimes few or no râles.

In the *third variety* (*c*) the physical signs approach those of fibrinous pneumonia, but the dulness is less marked and gradually shades off, lacking the sharp definition of the fibrinous form, and crepitant râles are usually present during the entire course of the disease.

TERMINATION.

In the fibrinous form about 95 per cent. of the cases recover. In the catarrhal form the mortality averages about 60 per cent., for this form attacks children under two; a large proportion are secondary cases, complications are more numerous, the tendency to chronicity and ulterior destructive changes in the lungs frequent; with chronicity, tubercular infection is also apt to occur. Empyema, frequently localised, is by no means uncommon.

One of the most annoying and frequent complications of broncho-pneumonia is intestinal catarrh.

TREATMENT.

We have yet no special treatment, the antitoxin not having been discovered.

Hygienic measures are all-important. A well-ventilated room of mean temperature; a tent-bed hung around with wet towels sprinkled with antiseptics—in very severe cases with much cyanosis oxygen mixed in the air of the tent is often of signal benefit; light, easily digested nutriment—over-feeding is harmful, vomiting and diarrhœa being complications to be dreaded. Routine poulticing is now discarded; a stimulating sinapism, replaced by a pneumonia jacket of Gamgee tissue, is often serviceable. By keeping up a local as well as a general diaphoresis relief is given to the engorged lung.

Drug treatment.—We have to help to maintain a compensatory physiological balance in the functional activity of the various organs. A continuous local and general diaphoresis best relieves the respiratory embarrassment. Liq. Ammon. Acet. and Sp. Æth. Nitrosi form an approved combination. Alcoholic stimulants are of great value, especially in broncho-pneumonia; next in importance as a stimulant is strychnine, of more value in the acute respiratory affections of children than of adults, from its action on the cardiac respiratory centres and cardiac ganglia.

In cases, particularly of infants, attacked with acute congestive bronchial catarrh in the early stages, the action of belladonna in soothing the afferent and efferent nerves in the bronchial walls and stimulating the respiratory centre is most marked. It is no use in the later stages where the alveoli are involved.

The *routine* use of digitalis is condemned; it is only useful where there is feeble pulse with weakness of the left ventricle and diminished arterial tension. In fibrinous pneumonia with large lobar consolidation the condition of the arterial system clearly contra-indicates its use. Heart failure here appears to be due to two principal causes—the depressing effects of the toxins on the nervous centres, and of a high temperature on the heart muscle. These are no indications for digitalis.

Antipyretics.—Phenacetin or antipyrin are often hurtful in large doses; in small doses, however, allay nervous irritability and restlessness. In hyper-pyrexia trust to the wet-pack, tepid bath, ice-bags, or other applications of cold.

Expectorants.—The depressing expectorants are distinctly contra-indicated.

REPORTS OF SOCIETIES.

British Medical Association.

Birmingham and Midland Counties Branch.

Thursday, December 8th, 1898; The President (Mr. Vincent Jackson) in the chair.

Dr. Purslow read a paper on Uterine Inertia.

Mr. J. Furneaux Jordan read a paper on the Treatment of Pus in the Pelvis.

Instrument for Breaking Gall-stones.—Mr. Lawson Tait showed an instrument he had repeatedly used, and always with success, in breaking up concretions which had been left in the ducts after cholecystotomy. He found that wherever a stone had travelled the instrument would follow without risk. It consisting of a small scoop, out of the end of which was cut a notch so that an instrument after the fashion of a double quill drill was formed. The addition of a tubular handle, through which a stream of water was forced, greatly assisted in the removal of the débris. The success met with by Mr. Barling and others in freely laying open the ducts and removing the stones entire was alike gratifying and surprising, but for his own part Mr. Tait would feel safer in leaving the ducts intact.

Ovarian Cyst.—Mr. Lawson Tait also showed a simple unilocular cyst, in which, by undue delay, the operation had been converted from one of the simplest and safest to one of the most difficult and deadly in his department of surgery. The case was one of a group of three, and of quite recent occurrence, where the patients had been held under observation for months after they might have been operated on and one had been tapped, giving the subsequent operation a fatal result. The preparations before them showed adhesions of an intimate nature over every part of its surface—there was no spot not adherent to something. The organs to which intimate attachment had occurred included the liver, the whole of the transverse colon, left kidney, small intestines, uterus, and bladder. The contents of the cyst were purulent. The shock of the operation was so great that until the day following the operation the patient's pulse could not be felt. The fatal case of the three died of shock, the present nearly did. Had these cases been operated on earlier all three would have made easy recoveries. It is not fair to the patients that the operations should be so unduly deferred. It was most unfair alike to the art of surgery and to the surgeon to reckon such cases in the mortality of the operation. The rule has been long established that for an ovarian or parovarian tumour the time of its removal should follow the time of its discovery as rapidly as possible, and that any practice of delay or encouragement of such a state of things as has resulted in these three cases should be regarded as an offence much worse than covering.

Stricture of the Œsophagus.—Retrograde dilatation from the stomach.—Mr. Barling showed a patient aged 2, who in August last drank sulphuric acid out of a bottle, and who six weeks later was admitted to the General Hospital with a stricture of the œsophagus. The child at that time could only swallow fluid in very small quantities, and she looked very ill and emaciated. Frequent attempts were made to pass an instrument through the stricture, on three occasions the child being anæsthetised, but all attempts to enter the stricture failed. On October the 31st, therefore, the abdomen was opened, and the stomach about the middle of its anterior surface, the incision in the organ being about an inch long and across its long diameter. Each edge of the stomach incision was secured by a thread, and precautions taken to prevent any leaking into the abdomen. The right index finger was then passed into the cardiac orifice of the stomach and used to guide bougies of various sizes into the œsophagus, and eventually a fine bougie was passed through the stricture and into the mouth. A second and larger was then passed through and tied to its lower end a piece of stout silk; with one end drawn out of the mouth and the other out of the stomach incision the string was used in a saw-like manner to divide the stricture tissue in the œsophagus. Further dilatation with bougies now enlarged the stricture until it would admit a number 13, which was left *in situ* in the œsophagus, the other end being brought out of the mouth. The stomach was now closed and the abdominal incision also, and an excellent recovery followed. A number 16 bougie can now be passed, but this has to be done every day, as there is a great tendency to contraction. The child is improving in general health and is able to take solid food of all kinds.

Murphy's Button.—Mr. Christopher Martin showed a Murphy's button, from a case of enterectomy, which had been retained in the bowel nearly four months. The patient was a woman aged about 55 years, who had a large umbilical hernia only partially reducible. She suffered from repeated attacks of obstruction, for which a previous operation had been performed, though without much relief. Mr. Martin operated on June 4th, and found adherent to the neck of the sac two coils of small intestine firmly glued together and twisted into a kind of knot. In separating them one coil was torn open. The bowel above and below the tear was so altered by chronic inflammation that it was necessary to excise about three inches. The two ends were anastomosed by Murphy's button. The patient made a good recovery from the operation save that she continued to suffer from persistent nausea and retching, which medicine quite failed to relieve. On September 27th she passed the Murphy's button, and from that time the nausea and retching ceased, having evidently been caused by the irritation of the button within the bowel.

PATHOLOGICAL AND CLINICAL SECTION.

The first meeting of the Session was held at the Medical Institute on Friday, October 28th, 1898. The Chair was taken at 8 o'clock by the President, Mr. JORDAN LLOYD.

Congenital Enlargement of the Forearm.—Mr. Gamgee showed a case of congenital enlargement of the right forearm and hand. The soft parts were mainly affected, the enlargement being apparently due to cavernous dilatation of lymphatic and blood vessels. A skiagraph showed that the heads of the 1st, 2nd, and 3rd metacarpal bones were enlarged slightly, and that there was an excess of lime salts in these bones. The patient, who was a girl of five years of age, had perfect use in the arm.

Anomalous Case of Progressive Muscular Atrophy. — Dr. Kauffmann showed an iron-moulder, aged 41, suffering from progressive muscular atrophy which commenced with bulbar paralysis, this symptom still being the distinctive character of the case. The illness commenced gradually and insidiously about twelve months ago in consequence, as the patient believed, of grief and a severe shock of fear. The earliest complaint was a loss of the higher notes in singing and a difficulty of articulation, which led to his giving up his position in a church choir about Christmas, 1897. To steadily progressing weakness of articulation there had succeeded, in April 1898, slowly-growing weakness of the left hand; and within the last month the patient had commenced to feel weakness in the right hand. His family history revealed no nervous disease of any kind. The sufferer's condition now is as follows:—Fair general health. Great effort and slowness and imperfection of articulation—no aphasia and no aphonia—occasional difficulty of deglutition. No facial paralysis. Protrusion of the tongue imperfect and feeble, and the tongue itself tremulous and small. Slight tremor of lips on opening the mouth. No wasting of the muscles of the neck or face, and no nystagmus.

Great weakness of grasp of the left hand, with distinct wasting of the dorsal interossei and of the hypothenar mass, and imperfect apposition of the thumb, a small degree of weakness of the right hand, and no visible wasting of its muscles. Some atrophy of the deltoids. Both these muscles and the pectoralis presented marked fibrillary contractions, an occasional flicker also appearing in the triceps on each side. The legs presented no atrophy, and the trunk-muscles had in no way suffered. The myotatic irritability was generally raised, both in legs, arms, and masseters, and slight ankle-clonus could be readily obtained. The sphincters were unaffected, and sensory disturbances were absent. The mental disposition was cheerful and contented, and though the patient was a little emotional, the invariable expression of excitement was laughter. The dysarthria was always greatest at the commencement of speech efforts, and diminished sensibly when these had been continued for a few minutes.

Ruptured Kidney.—Mr. Leedham-Green read a note on a case of ruptured kidney, with severe hæmorrhage, in which the kidney was removed by operation. The patient recovered.

Carcinomatous Change Supervening on an Innocent Tumour of the Breast.—Mr. Barling showed this specimen, removed from a very stout lady of middle age. For some months two tumours had been noticed on the axillary margin of the right breast; over the smaller of these there was slight puckering of the skin which led to a diagnosis of hard carcinoma, but there was no puckering of the skin over the larger tumour, which gave the impression of elasticity of doubtful fluctuation. After removal it was found that there were two tumours separated by two inches of healthy breast tissue. The smaller tumour, the size of the tip of the middle finger, presented the characteristic appearance on section of hard carcinoma, whilst the larger tumour proved to be partly solid and partly cystic. There was a cavity an inch and a quarter in diameter, and connected with this cyst was a well-defined firm growth with a few small cysts scattered in its substance. On section the characteristic cupping of the surface noticed in the smaller growth was absent. Microscopic section showed the smaller tumour to be a scirrhous carcinoma, whilst the solid part of the larger tumour showed in parts the structure of a fibro-adenoma and in others carcinomatous areas of characteristic appearance. The axillary fat with its contained glands was dissected out in the usual manner, but microscopical examination failed to detect any infection of the glands.

Mediastinal Tumour.—Dr. Douglas Stanley showed a specimen of mediastinal tumour. The patient was a man aged 32, strongly built, and who was employed as a carriage and truck shunter on the railway. The chief symptoms were congestion of the face, loss of voice, and cough. A large area of dulness extended across the upper part of the chest, which was non-pulsable; the cardiac sounds were very distant. The growth extended down, involving the pericardium.

The second meeting of the Session was held in the Medical Institute on Friday, November 25th, at 8 p.m., the PRESIDENT (Mr. JORDAN LLOYD) in the chair.

Extra-dural Abscess.—Mr. Gamgee read a note on two cases of extra-dural abscess, complicating suppurative otitis media. Both patients were children, 5 years of age. In each case the abscess cavity was situated between the upper surface of the petrous bone and the dura overlying the temporo-sphenoidal lobe; in the one instance the membranes were intact, while in the other the dura, pia, and arachnoid were adherent and perforated, exposing a slight patch of brain matter. The treatment adopted in each case was the opening up of the antrum, with free removal of bone, so as to lay open the whole abscess cavity. Both patients recovered.

Urinary Calculi.—Mr. Haslam showed—

1. A small stone, weighing only seven grains, that he had removed from the kidney of a man aged 26, who had had attacks of profuse hæmaturia for nearly twelve months, and some pain in the region of the kidney.

2. Three large and two small stones, weighing in all 24 grains, that he had removed from the ureter of a man aged 24. The patient had been under his care four and a half years ago with symptoms of stone in the left kidney, but on exploring that organ no stone was found. The symptoms, however, were completely removed by the operation. For four months before admission on the present occasion he had suffered from acute pain over a spot about midway between the umbilicus and the right anterior superior spine of the ilium. The pain was greatly aggravated by pressure or by flexion of that leg. There was also pain in the bladder and penis, and the urine contained pus. The right ureter was explored through an incision very similar to that employed for ligature of the common iliac artery by the extra peritoneal route. The stones were easily detected and removed. The ureter was not sutured, but a drainage tube was passed down to it and the wound was sewn up. No urine ever came through the tube, and the wound rapidly healed.

3. A round stone, weighing 212 grains, removed by suprabubic lithotomy from a boy aged 9 years. The patient was not aware of there being anything the matter with him until a few days before admission, when the stone evidently blocked the opening of his urethra and interfered with his emptying his

bladder. At the operation, though the bladder was distended until it reached half-way up to the umbilicus, the peritoneum was found to extend down to the pubes.

Enteric Fever and Pylephlebitis.—Dr. Foxwell showed two specimens of intestine. The first was from a woman who died from enteric fever on the forty-sixth day, in a relapse, death apparently being due to blood poisoning. The ulceration was very extensive, especially in the colon, where the ulcers ran transversely, often an inch in length like tubercular ulcers. In both colon and ileum were several small patches of localised adhesive peritonitis. On separating these, however gently, fæcal extravasation took place. The gut itself tore very easily, so that it was difficult to say if there were actual perforation during life. In the primary attack there was nothing noteworthy except considerable diarrhœa, which steadily decreased and, in six days, ceased under tannalbin given in 15 grain doses every four hours. Throughout the relapse there was considerable distension, which sometimes became acute, but was always relieved by enema, seidlitz powder, or rectal tube. This last was most efficacious, and the sister found it much easier to manage the loose, involuntary stools when it was *in situ*.

The other specimen was also taken from a woman, age 40, who was admitted with diarrhœa, abdominal pain, headache, and fever. Ten days after the first onset a rigor occurred, and afterwards there were one, two, and three daily, the temperature several times being above 107° F. She was treated as probably suffering from enteric, but when Dr. Foxwell first saw her, on the thirty-fifth day, there was no doubt that the condition was one of "concealed suppuration: probably appendicitis." It was quite impossible to localise this, however. Both liver and spleen were large, but neither was tense nor had any tenderness. The abdomen was varyingly somewhat rigid in places, but nowhere constantly so, though most frequently on the left side. Once a slight doughyness was noted in the right iliac fossa. As a whole the belly was natural in appearance and flaccid. Vaginal and rectal examinations were negative. On the thirty-eighth day distinct acute neuritis of both discs was seen; no streptococci could be found in the blood, but Widal's reaction was present in a concentrated though not in a dilute solution. The patient had had enteric two years previously. The brain and cord were now explored in several places by Mr. Leedham Green, but neither pus nor any excess of meningeal or ventricular fluid was discovered. After this operation the rigors ceased for five days, but then recurred, and death came on the fifty-second day of the illness.

Post mortem.—Deep down in the right pelvis the ileo-cæcal valve, with the adjoining portions of ileum and cæcum, was firmly adherent to the pelvic wall by old fibrous adhesions; on separating these a drachm of not evil-smelling pus was discovered. In the ileum, one inch from the valve, was an old perforation with thickened walls, a quarter of an inch in diameter. There were no signs of any recent peritonitis, but thin translucent old adhesions existed in several places. The liver was riddled with pylephlebitic abscesses. The brain was healthy, but in one of the tracks of the exploring needle, in the right lobe of the cerebellum, was a recent blood-clot, half an inch by a quarter. No cause could be discovered for the neuritis.

Dr. Foxwell thought the first case showed how hopeless the multiple lesions in enteric must often make any attempt at surgical procedure. It also gave striking evidence of the power of self closure in ulcerative perforation. The second case gave equally striking evidence of the danger of an old perforation even when securely sealed, whilst it also proved conclusively the possibility of such sealing.

Sub-phrenic Abscess.—Dr. Short showed the stomach from a case of sub-phrenic abscess following perforation of the viscus. The patient was a girl æt. 16, who was first seen on August 17th, fourteen days after being taken with severe pain in the region of the stomach with vomiting. She had previously suffered from dyspepsia and pain after food for twelve months, but had never vomited blood. The physical signs pointed to air and fluid beneath the diaphragm. On draining the cavity through the 9th space in the posterior axillary line fœtid pus was evacuated. She did very well for some three months, but the temperature was never satisfactory. At the end of this time she suddenly developed acute pleuro-pneumonia up the right side and died in a few days. At the autopsy some curdy pus was found in the crevices between the stomach, liver, and diaphragm; otherwise the abscess cavity was healed and the ulcer closed by firm adhesions to the spleen.

Myoma of Uterus.—Mr. J. Furneaux Jordan showed two specimens of uteri removed by hysterectomy for myoma. The first was a large myoma weighing eight and three-quarter pounds. It was removed from a patient aged 50, and her history was briefly as follows:—First appearance of tumour a little over three years ago—grew rapidly at first. She came under Mr. Jordan's care in the out-patient department of the Women's Hospital two and a half years ago, and under treatment its growth ceased so much that for the next eighteen months there was very little increase in size of the tumour, and the hæmorrhage consisted of practically nothing more than rather profuse menstrual periods. Twelve months ago it again increased in size and there was also increase in the hæmorrhage. The patient had suffered from chronic bronchitis for thirteen years, her respiration was always hampered, and directly the tumour increased in size, rising well above the umbilicus, it became exceedingly embarrassed. She was admitted to the hospital, but at a consultation it was decided to postpone operation on account of the condition of the lungs being such as to render the administration of an anæsthetic a serious matter. The tumour continued to grow, and the hæmorrhage becoming more and more profuse she was admitted again in September of this year. She was with difficulty anæsthetised with chloroform, and in a very few minutes the tumour was removed by the clamp hysterectomy. A large nodule had, previously to the application of the clamp, to be shelled out of the left broad ligament. She made a good recovery although her bronchitis is still very troublesome.

The second specimen was a uterus with several large nodules of fibro-myoma which had completely blocked up the pelvis. It had been removed nine days previously from a patient, age 51. She was admitted to Mr. Jordan's private hospital, where the operation was performed, for pressure symptoms in the pelvis and because it was increasing in size. Complete hysterectomy was performed by the combined method. She had quite a sharp attack of peritonitis on the second and third day, in which his colleague, Mr. J. W. Taylor kindly saw her, but is now quite convalescent.

MIDLAND MEDICAL SOCIETY.

A meeting of this Society was held on November 2nd, at the Medical Institute, Birmingham, the PRESIDENT (Dr. W. G. LOWE) being in the Chair.

The following gentlemen were elected members of the Society:—Mr. H. D'A. Ellis, Mr. R. H. Gilpin, Mr. F. V. Milward, Mr. A. Croll, and Mr. J. F. V. Hall.

Ectopion Vesicæ.—Mr. Chavasse showed a case of ectopion vesicæ. The patient was a girl, æt. 4 years. Various plastic and osteoplastic operations had been unsuccessfully performed. In December, 1897, Mr. Chavasse separated the ureters from the bladder and transplanted them into the vagina, and cut away the posterior wall of the bladder. The remaining cleft was closed at a later period by Thiersch's method. The urine passed into the vagina, and was caught by urinal applied to the vulva.

Fracture of Inner Wall of Orbit into Anterior Ethmoidal Cells.—Mr. J. T. J. Morrison showed a man aged 24, who, on

October 4th, had been kicked on the upper and inner angle of the left orbit by a pony whilst he was stooping down behind the animal. The blow, which was not very forcible, appeared to have been struck by the inner calkin of the shoe on the near hind foot. Soon after the injury both the left eyelids began to swell, and some hours later the swelling greatly increased when the patient was blowing his nose, and a little blood-stained mucus came from the left nostril. When seen on October 7th there was considerable surgical emphysema of the left eyelids, and pressure on the upper and inner part of the orbit caused pain. There was also some proptosis (noted by Mr. Priestley Smith), but no diplopia. No sign of bruising could be seen. The history and appearances excluded injury of frontal sinus, antrum, or nasal bone; the air must, therefore, have escaped from the anterior ethmoidal cells, as a result of fracture of the posterior portion of lachrymal bone, or adjacent part of os planum of ethmoid, or both these bones. A pad of wool was applied to the lids, and the nostril irrigated daily with izal lotion. In a week all traces of the injury had disappeared.

Fibro-myoma of Penis.—Mr. Haslam showed a tumour, the size of a hen's egg, that he had removed from the penis of a man aged 43. Ever since the patient could remember, he had had a small lump on the right side of the penis just in front of the scrotum. For some time this had been gradually increasing in size, and for the last two months its growth had been rapid. On admission the tumour was found to be attached by a broad base to the right corpus cavernosum on its lateral and ventral aspects, but was not interfering in any way with the urethra, though at the operation it was found to be very close to this. On section after removal the tumour had all the appearances of a fibro-myoma of the uterus, and its structure, as shown by the microscope, consisted of fibrous tissue with a very large proportion of involuntary muscular tissue.

Dr. Lamb read a paper on the Diagnosis of Suppuration in the Accessory Cavities of the Nose, which we publish elsewhere.

KIDDERMINSTER MEDICAL SOCIETY.

Meeting held on November 25, 1898; Mr. E. H. ADDENBROOKE (President) in the chair. Messrs. B. Addenbrooke, U. W. N. Miles, and Baker were elected members.

Mr. J. L. Stretton mentioned a case of a women, age 40, upon whom he had performed cæsarian section. She was admitted in September with extensive malignant disease of the cervix and vagina, and was at the time about six months pregnant. The operation was performed on the 7th November, because her condition was becoming so bad that further delay was out of the question. She bore the operation, which lasted about half an hour, well, and made an uneventful recovery, and was in a much better condition than before the operation. Her temperature never exceeded more than 101°. The wound was first dressed on the 15th, and the stitches removed on the 22nd, the wound being soundly healed. The baby, which weighed 4½ pounds, is also doing well. He thought her recovery was in a large measure due to the rapid operation. It was remarkable that there was no suppuration in view of the extensive disease and the very fœtid vaginal discharge.

A rectum removed from a woman age 61. She had suffered from symptoms for eight months, and the operation was performed on 19th July. A small portion of the recto-vaginal septum which was adherent was removed, and the wound closed with sutures. About four inches of bowel was removed, and as the growth did not involve the sphincter the greater part of it was left and the bowel brought down and sutured to it. The bowels moved consciously on the eighth day; the stitches were removed on the twelfth day. On August 13th she was discharged cured. The bowels acted regularly and under control.

November 25th Mr. A. C. Oldham, who has charge of her, informs me that she has full control of her motions. There is no contraction of the anus and no recurrence of the disease. This result demonstrates the advantage, in some cases, at any rate, of suturing the bowel to the external sphincter.

A man, age 22, upon whom he had operated for strangulated hernia. There was a considerable swelling, which contained a large piece of omentum. The rings were quite free, and the constriction was situated at the centre of the sac, and consisted of a thick fibrous circular band so strong that it had worn a deep groove in the portion of omentum, and had evidently been of long standing. The omentum and sac were removed and a radical cure performed. The specimens and the man were shown. The scar, after four months, is quite sound.

Notes of a case of strangulated hernia in an old lady, age 73, seen in consultation with Mr. Dennis Fitch and Mr. Pomeroy. She had been ruptured for eight years and had worn a truss. On several occasions there had been difficulty in reducing the hernia. It came down about twelve hours previous to my seeing her, 12th July, 1898, and all efforts at reduction were unavailing. Under an anæsthetic an incision was made over the swelling in the right groin, and a loop of the ascending colon was exposed and returned to the abdomen. The sac covering the bowel was very thin. When the bowel had been returned a glistening body was exposed which had been lying behind it. On examination this was found to be the thickened sac of the original hernia. In the present instance the bowel had come through the ring in front of the neck of the old sac, carrying the peritoneum with it. The sac was removed and a radical cure effected, an uneventful recovery following. These two cases were interesting examples of the unexpected in hernia operations.

Forty-two gall-stones removed from a woman, age 36. At the time of operation it was evident that one or more stones were impacted in the common duct, and as they could not easily be dislodged they were left to come away rather than prolong the operation. So far as we can ascertain they have never come away, although nearly six months have elapsed since the operation. She has had no recurrence of her symptoms, and bile has reappeared in the stools, so it is possible they have been passed per anum.

A scirrhus of the breast of a woman, age 49.

Dr. Evans showed skiagraphs.

Mr. Oliphant showed for Mr. Hodgson Moore a man, age 38, from whose knee-joint a foreign body had been removed three weeks ago. It was found to be a small piece of the articular surface, cartilage and bone, of the lower end of the femur, which had been chipped off as the result of an accident. He recovered without any bad symptoms, and the joint is freely movable.

A lipoma, about the size of a walnut, removed from the floor of the mouth of a lad, age 16. Before removal it was thought to be a ranula.

A man, age 41. who, after extensive disease of the inter-phalangeal joint of his right thumb, was left a useful hand for his work as a mason. He objected to have his thumb amputated, and the result demonstrated the advantage of conservative surgery in such cases.

Mr. W. Miles mentioned the case of a woman with a tumour in her side, which resembled a movable kidney, so much so that the surgeon who was consulted made an incision in the loin, but the tumour turned out to be a portion of the right lobe of the liver, with a dilated gall-bladder attached.

Mr. Oliphant read a paper on Twelve Months' Work at the Hospital.

REVIEWS.

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THE PATHOLOGY AND SURGICAL TREATMENT OF TUMOURS.*

BOOKS specially devoted to these subjects are few, and in our text-books and systems of surgery surgical pathology is usually condensed to a degree incompatible with its scientific and clinical importance.

The author has spent many years in collecting the material for this work, and has taken great pains to present it in a manner that should prove useful as a text-book for the student, a work of reference for the busy practitioner, and a reliable safe guide for the surgeon. For the purpose of simplifying diagnosis a special effort has been made to trace every tumour to its proper anatomical starting-point and histogenetic source, and to make a sharp histological and clinical distinction between true tumours, inflammatory swellings, and retention cysts.

The increase in volume caused by a tumour is due entirely to erratic cell-growth from a matrix of embryonal cells of congenital or post-natal origin; the enlargement of a part or an organ caused by chronic inflammation which so often simulates a tumour is due to proliferation of pre-existing mature cells acted upon by pathogenic micro-organisms or their toxines, and to the vascular changes and cell-migration characteristic of inflammation; while a retention-cyst essentially consists of an accumulation of a physiological secretion in a pre-formed glandular space, the result of a mechanical obstruction. The classification of tumours in this work is in accord with this theory of the origin of tumours. The microbic origin of tumours is briefly disposed of, as it has not been established by any convincing experimental investigations or clinical observations.

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* The Pathology and Surgical Treatment of Tumours. By N. Senn, M.D., Ph.D., LL.D., Professor of Practice of Surgery and Clinical Surgery, Rush Medical College, Chicago, etc. Illustrated. Philadelphia: W. B. Saunders. 1897.

The first part of the treatise is devoted to a general consideration of tumours, and it is this part which is intended more especially for the use of students. A description of each class of tumours is followed by a consideration of the topographical distribution of that particular kind of tumour in the different regions and organs of the body, with a description of the different operative procedures for their removal. The volume is profusely illustrated to keep constantly before the reader's eye the microscopical picture of the tumour, which in many places is contrasted with the normal structure of the tissues corresponding with the anatomical location of the tumour. The more difficult operations are fully described and illustrated. More than one hundred of the illustrations are original. No expense has been spared by the publisher in presenting this book to the profession.

The author adopts the Cohnheim theory of the origin of tumours, but supplements it curiously in such a way as to neutralise in reality the prime essentials of this theory. He agrees with Cohnheim in his belief that all tumours originate from a congenital matrix of embryonal cells, and adds, " or post-natal matrix of embryonal cells." He therefore both accepts and rejects the very essence of Cohnheim's theory. His definitions of the several varieties of tumours and their sources of origin is perhaps scientific, but it does not tell us much to say that fibromata originate from fibroblasts, chondromata from chondroblasts, lipomata from lipoblasts, angiomata from angioblasts, myomata from myoblasts, lymphomata from lymphoblasts, and so on through the whole series of normal tissue elements. Scarcely any allusion is made in the volume to any of the work of British pathologists—with the exception of an occasional reference to Sutton's recent publications and the older work of Hamilton; and so far as operative surgery is concerned the labours of the masters of British surgery—Spence, Syme, Fergusson, Liston, Cooper, and Hunter, are altogether overlooked or their original operations are credited to American or German surgeons.

The volume consists of more than seven hundred pages, and is extremely well written throughout, but a less constant repetition of statements would materially reduce the bulk of the book and would make it none the less readable or valuable.

The author advances many views which we cannot accept; for example—we do not think that the rapidly-forming pancreatic cyst which follows injury to that organ can be properly regarded as a "retention cyst" according to the author's own definition. Such effusions occur frequently into the retroperitoneal connective tissue and not into "a pre-existing space." His own experiments on dogs show that obstruction of the pancreatic duct is followed only by simple distension of the duct and its branches and not by the formation of anything in the nature of these so-called "pancreatic cysts."

Notwithstanding our occasional disagreement we can most strongly recommend Dr. Senn's volume to our readers as we consider it by far the best book in the English language upon the pathology of the subjects with which it deals. It is the work of a recognised master, and those who know and value his former writings will gladly welcome this additional contribution from his pen. We would call the attention of British publishers to the style in which the volume is brought out. The letterpress is of the highest order; the illustrations are skilfully executed, and the publication altogether is a credit to the printer's art.

MEDITERRANEAN, MALTA, OR UNDULANT FEVER.*

The author has done a valuable service to the medical world in writing this monograph, for on the subject of "Malta fever" there is assuredly still much unclearness in the minds of medical men who have not seen cases of the disease. Most of them would, probably, if confronted with a question as to its pathology put it down as a variety of malarial fever. Nor is this uncertainty confined to doctors at home. Captain Lewis tells in his preface that when he arrived at Malta in 1890 "he found that his medical work would consist chiefly . . . of treating a fever about which no two medical officers appeared to agree respecting its cause, treatment, or even name." But the writer shows that such confusion is no longer justified in the light which his own researches and those of other Army Medical Officers have thrown on the subject. The reason for the confusion no doubt lies in the extreme variability of the clinical course of the malady. The credit of clearing up belongs entirely to different members of the Army Medical Staff, among whom Dr. Lewis is the latest and completest contributor.

The disease is a specific febrile one, due to a micrococcus which was discovered in 1886 by Surgeon-Major Bruce. The specific pathogenic nature of this microbe is made out with absolute completeness, and all doubts as to whether the disease be a variety of malaria or typhoid or any other specific disorder is therefore set at rest. The geographic distribution is chiefly along the shores of the Mediterranean, but is not yet completely delineated; it seems certain that this fever occurs also on the coasts of the Red Sea, and probable that cases arise in India, China, and North America. As regards its age, Dr. Hughes believes that the disease was described by Hippocrates.

In discussing the predisposing causes the author shows that the disorder is not directly contagious from man to man, that it is not due to wound infection, nor to mosquito-bites, and that its prevalence is not parallel with that of typhoid fever and is independent of water-supply. Milk and other food appear from very careful enquiry to have no bearing upon the causation. Finally, many other opinions and examples within the author's own experience are cited to show that outbreaks of Malta Fever are intimately associated with insanitary conditions of towns or barracks or individual houses, or even individual rooms in houses. The writer's cases appear to us to be beyond refutation, so striking have been tha results of removing foul water-closets or accumulated sewage in curing the dangerous houses or rooms of the risk to their inhabitants. The result of these thorough studies is the knowledge that the disease is associated with fæcal pollution of the air, and that the microbes are raised from the superficial dried layers of polluted soil or flooring by air-currents. This tallies with the fact that the fever is most prevalent in the dry, hot season, and that its frequency varies directly with the heat-curve and inversely with the rainfall-curve.

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* Mediterranean, Malta, or Undulant Fever. By Surgeon-Captain M. Louis Hughes, A.M.S. London : Macmillan.

Clinically the cases differ greatly from one another both in duration and intensity. The common character of all cases is recurrence of waves of remittent fever lasting from one to three weeks, the waves being separated by a few days of apyrexia. By reason of this leading characteristic Dr. Hughes proposes the name of "Undulant Fever," which to us appears to have all the advantages of brevity and true descriptiveness, while it is free from the evident fault of a geographical name. The symptoms are described by the author with great clearness and the numerous charts help to illustrate the clinical part of the book in a particularly useful manner. The complete exposé of the pathogenesis at once indicates the lines of preventive treatment, which should be read with attention by all who may be called upon to deal with this malady. As regards curative remedies there is no specific, quinine affecting the disease in no manner. Some of the common synthetic febrifuge remedies, which of course have been largely tried, appear to be positively harmful, and Dr. Hughes seems to have been reduced as regards this part of the treatment to deal with the symptoms as they arise and steer the patient through the long series of dangers as each one crops up.

We would draw special attention to the remarks in the preface dealing with the economic question—from the paymaster's point of view—which this fever creates. Its extreme frequency and the very long duration, ranging from 30 to 160 days, and the prolonged period of debility which follows, strongly urge the consideration of radical means for the prevention of the disease. The nature of these remedies becomes clear to the reader, though some facts make one doubt whether the present state of the Malta rock will permit of complete purification.

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The pathological part of the monograph is very complete, and in addition to the author's many and thorough investigations contains a record of Surgeon-Major Bruce's inoculation experiments.

Altogether the book is one of the best monographs which we have had the fortune to notice. Every Medical Officer in the Army or Navy should master it, and reference to its pages cannot fail to be helpful to him in the differential diagnosis of the febrile conditions which he will encounter in Mediterranean latitudes.

A CLINICAL TREATISE ON DISEASES OF THE BREAST.*

THOUGH much has been written during the last few years on the subject of diseases of the breast, yet a good modern textbook, such as the one before us, was undoubtedly needed.

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* A Clinical Treatise on Diseases of the Breast. By A. Marmaduke Sheild, M.B. Cantab., F.R.C.S. Pp. 510. London : Macmillan and Co. Limited. 1898.

Mr. Marmaduke Sheild brings to bear on his subject a judicial frame of mind, ample clinical experience, and that ease of expression which is, unfortunately, not always shown in English medical and surgical works. Mr. Sheild first deals with the more or less rare conditions of supernumerary mammæ, gynæcomazia, hypertrophy of the mamma, and amazia and mirocomazia, and cites numbers of interesting cases, partly from the records of St. George's Hospital and partly from the writings of other authorities. In the chapter on Mammary Abscess the author advocates free incision and scraping of chronic sinuses, and asserts his "belief that breasts are removed too frequently for these affections." We quite agree with the treament here suggested, but it is certainly news to us that breasts are "frequently" removed for the condition under consideration. One of the first sections that one turns to on reading a new book on diseases of the breast is that on Paget's disease, and we find that on the whole Mr. Sheild agrees with Thinn that the affection of the nipple is a destructive dermatitis of the papillary layer, and that the carcinoma in connection with it takes its origin from the epithelium of the lactiferous ducts; though he holds the opinion that the acinous epithelium also takes a part, and hence that the tumour resulting from Paget's disease must be looked upon as a carcinoma of mixed structure.

The author advocates the putting aside of the complicated terms so often used in writing of tumours of the breast, and holds that a mammary sarcoma, though it may contain cysts and intra-cystic growths, is still to be looked upon and spoken of as a sarcoma. In this we think he is right, for the attempt to devise names for some growths of the breast, which shall indicate all their structural features, generally only makes confusion worse confounded.

For the treatment of cysts of the breast Mr. Sheild lays down some sound rules, viz.:—(*a*) For a simple cyst, evacuate; (*b*) for multiple and simple cysts, remove the breast; (*c*) for a cyst with intra-cystic growth, excise the cyst; (*d*) if the intracystic growth be abundant, and the cyst wall thick and juicy, excise the breast, especially if the fluid in the cyst is sanguineous. Since Cornil and Ranvier, many years ago, published their description of duct carcinoma of the breast, many conflicting opinions as to the nature and origin of this growth have been put forward, and we are glad to find that Mr. Sheild clears the ground by saying that "the disease commences as the well-known duct papilloma," the epithelium of which shoots beyond the basement membrane, forming columns of cells, and that this process is taking place in many dilated ducts at the same time. He also suggests that in the cases recorded, in which, after removal of a so-called cystic sarcoma of the breast, a carcinoma occurred in the same breast, the original growth was a villous duct cancer.

For the details of the operation of excision of the breast as practised by Mr. Sheild, we must refer the reader to the account contained in the book. Suffice it to say that the operation is not of so radical a nature as that practised by Helsted.

The book is excellently printed and bound, and contains specially good illustrations and plates. We have no hesitation in saying that Mr. Sheild's treatise is an admirable one, and that it should be read by every one interested in this most important subject.

THE MEDICAL AND SURGICAL REVIEW OF REVIEWS.*

We have received the second number of "The Medical and Surgical Review of Reviews." One would be inclined to think that among the enormous number of publications and medical journals no place could be found for another. In point of fact this is the *raison d'être* for the appearance of another. Medical literature has become so diffuse that it is now impossible for the average reader to follow even the best articles in English journals, to say nothing of the foreign, and therefore a great deal of information of the highest importance is liable to be missed. Thus it is essential to have some means of following the progress of medical literature and at the same time enabling the busy man to lay his hand at once on such subjects which he may happen to require. There are various novel features in connection with the present publication Any reader who may require more complete details than are given in the digest of the articles, can obtain them on applying to the office. In the same way the medical periodicals of the world can be seen at the office, and duplicate copies will be supplied at cost price; it is even possible to obtain a type-written copy of any article mentioned in the Review for the cost of production. Nor does the magazine intend to give merely summaries of the principal medical papers of the month, but will also publish original articles and notices of matters of professional interest. At the end of the year we are promised a careful method of indexing, which cannot but greatly enhance the value of the Review. With these objects in view it would be impossible for such a paper not to take at once a first place and become an indispensable part of every library, public and private. We are glad to notice that, unlike some journals, the printing and paper are excellent, and it is a pleasure to be able to assist in making The Medical and Surgical Review of Reviews known to our readers.

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* The Medical and Surgical Review of Reviews. Edited by Nathan E. Boyd, M.D.

AN AMERICAN TEXT-BOOK OF GENITO-URINARY DISEASES, SYPHILIS, AND DISEASES OF THE SKIN.*

WE cannot help thinking that Drs. Bangs and Hardaway would have done better if they had not combined three such important subjects as genito-urinary diseases, syphilis, and skin diseases in one work, for the result of doing so is the production of two ponderous volumes which are heavy to carry about and awkward to hold. However, this is almost the only adverse criticism of the book that we can make, for editors and contributors alike have done their work well. That the latter have been carefully chosen is shown by the fact that Drs. J. William White and Alfred Wood have written the section on Diseases of the Prostate, and that Dr. Christian Fenger has written that on Diseases of the Ureters. This last-named chapter we look upon as one of the most valuable in the book, for it deals with a difficult subject in a thoroughly scientific and practical manner. Dr. Francis Watson has written the chapter on Diseases of the Bladder, and Dr. J. S. Howe that on Acquired Syphilis.

The subject of Diseases of the Skin takes up nearly 450 pages, and has been written upon by various contributors in a concise and practical way.

The book is excellently printed, and the illustrations and plates are well done. If we have any fault to find with the latter it is that the colours in the plates illustrating the syphilodermata are too bright and vivid, but, after all, this is unfortunately no more than can be said about many plates illustrative of skin diseases.

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* An American Text-Book of Genito-Urinary Diseases, Syphilis, and Diseases of the Skin. Edited by L. Bolton Bangs, M.D., and W. A. Hardaway, M.D. Vols 2, pp. 1,229. Illustrated with 300 Engravings and 20 Full-page Coloured Plates. London: The Rebman Publishing Company Limited. 1898.

TEXT-BOOK OF DISEASES OF THE KIDNEYS AND GENITO-URINARY ORGANS.*

This is a systematic work by a writer who is well known as the author of many papers on affections of the kidneys and allied subjects. It is written in a somewhat condensed text-book style, but contains a great deal of information carefully arranged and well put, the range of the book including many subjects which in English text-books would be found only in surgical treatises, but this can hardly be deemed a fault. The translation is on the whole good, but does not always succeed in rendering the German text into intelligible English, and is at times clumsy and inexact; for example, we cannot make head or tail of the following sentence (page 271):—"We cannot admit from our own experience that even reduced power only in 'very exceptional cases' (P. Muller) or 'never' (Gyurkovechky) has produced a human being and the latter in the most important cases having nothing in common with the attributes of the impotentia coeundi." We note also urethritis for inflammation of the ureter (page 37), perinæal for peritoneal (page 38), etc. But these are small defects in a work which has been on the whole well done, and the translator deserves our gratitude for his labour in introducing Professor Fürbringer's practical volumes to English readers.

METHODS OF STAINING THE NERVOUS SYSTEM.†

This work consists of an accurate description of all the methods of examination of the nervous system, and, as is well known, it has taken the first place in Germany. There is, therefore, no apology needed on the part of the translator for introducing it to the British public. The method followed in the work is, firstly, a description of the macroscopic examination of the brain, the preparation of macroscopical specimens and brain tissue for section cutting and staining. All the various formulæ and the steps of each method are clearly given. Embedding and section cutting by every method are given in full. Secondly, special methods of staining are carefully described, according as one wishes to examine cell bodies or neuroglia. One feature noticeable in this work is that various little details are not overlooked—a point which constitutes a grave fault in other works on the same subject. Anyone who has had practical experience in neurohistology is fully aware that the mere description of a method is not always sufficient. The methods of staining the nervous system are made up of details, and often valuable time is lost and material spoilt for the want of a few practical hints and suggestions over and above the mere description of the method employed. We therefore very strongly recommend Dr. Jack's translation of Pollack's work as an indispensable guide to the neurohistologist.

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* Text-Book of Diseases of the Kidneys and Genito-Urinary Organs. By Professor Dr. Paul Fürbringer, Director of the Friedrichshain Hospital, Berlin, and translated from the German by W. H. Gilbert, M.D., Physician in Baden-Baden, etc. In two volumes. Volume ii. London: H. K. Lewis. 1898.

† Methods of Staining the Nervous System. By Bernhard Pollack. Translated from the German Second Edition by William R. Jack, M.D. Glasgow: F. Bauermeister.

A TEXT-BOOK UPON THE PATHOGENIC BACTERIA.*

We have to record the appearance of a second edition of Professor McFarland's Text-Book of the Pathogenic Bacteria, the first edition of which we reviewed last year. This new edition differs from its predecessor rather in the inclusion of new matter than in any great alteration of the text as it formerly appeared. The principal change lies in the greater attention which has been paid to the description of methods of working and of apparatus, thus, as the author claims, rendering the book both a systematic work on bacteria and a laboratory guide. We also note that Professor McFarland now gives definite references to the works mentioned in the text.

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* A Text-Book upon the Pathogenic Bacteria, for Students of Medicine and Physicians. By Joseph McFarland, M.D., Professor of Pathology in the Medico-Chirurgical College, Philadelphia, etc. Second Edition, revised and enlarged. London: Henry Kimpton. 1898.

New chapters have been added on the bacteriology of whooping-cough, mumps, yellow fever, hog-cholera and swine-plague, dealing with recent work done on those subjects. Chapters are also devoted to the description of the bacillus aërogenes capsulatus and the proteus vulgaris, and there is a useful section on the methods of estimating the value of antiseptics and germicides, and of determining the thermal death-point of micro-organisms. We formerly expressed our opinion that the book is a good practical manual for workers in bacteriology, and the changes here noted have materially increased its value.

THE LIVING ORGANISM.*

Mr. Earl is probably mistaken in addressing this book to the "beginners" in the science of biology, if by that term he implies those who have as yet no knowledge of the elementary facts of the subject. We should prefer to describe it as an introduction to the higher problems of biology, and to commend it to the notice of those who desire to master the more abstract and philosophical side of the science. In any case, some knowledge of the anatomical and structural facts of animal and vegetable organisms is essential for the right appreciation of the book.

Of the work itself we can here only say that it deals, often in an original, and always in a thoughtful manner, with the broad problems of the nature and reactions of the living organism. A right understanding of the issues raised in the discussion of such problems is essential, and this book will materially assist the student in the acquirement of such an understanding. The key to the problems themselves, if existing at all, must be sought in the writing of the great biologists, to whose works it forms so excellent an introduction.

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* The Living Organism: an Introduction to the Problems of Biology. By Alfred Earl, M.A., of the Inner Temple, Barrister-at-Law. London: Macmillan and Co. Limited. 1898.

PRACTICAL URINALYSIS AND URINARY DIAGNOSIS.*

THE fact that within three years of its first appearance three editions of this book have been exhausted is sufficient testimony of the place which it has taken in the ranks of special textbooks. As far as we know it is chiefly in America that it has hitherto been read, and it is certainly well that the attention of students and physicians in this country should now be drawn to it. It differs from many of the numerous books on urinary analysis in the thoroughness with which it deals with its subject and the absence of the usual omission of the more advanced and complicated work. We are informed that many parts of the book have been to a great extent re-written for the present edition. This we can well understand, seeing that it is in all respects well abreast with the work done up to the date of publication. We can strongly recommend the book, both to students who wish to acquire an intimate knowledge of urinary analysis, and still more to the working members of the profession.

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* Practical Urinalysis and Urinary Diagnosis. By Charles W. Purdy, M.D., LL.D. Queen's University, Professor of Clinical Medicine at the Chicago Post-Graduate Medical School. Fourth, Revised Edition. Philadelphia, New York, Chicago: The F. A. Davis Company. 1898. For sale in Great Britain: Sampson Low, Marston and Co.

DISEASES OF THE UPPER RESPIRATORY TRACT; THE NOSE, PHARYNX, AND LARYNX.*

THIS work has very quickly reached its third edition. The first edition was sold out within a few months of its publication, and the second edition of a thousand copies has been exhausted. This shows that such a book was needed, and we congratulate the author on its deserved success.

The text of the new edition has been revised and altered in one or two places to bring it up to date. The book is replete with excellent illustrations, both original and copied from the larger and more comprehensive text-books on the subjects. There are useful comparative tables to aid the differential diagnosis between some of the more frequent affections of the tonsil, and also formulæ for the most generally needed remedies in the treatment of the special diseases discussed in the book.

We commend the perusal of this work to all who are interested in the study of laryngology and rhinology, as the ætiology, diagnosis, and treatment of the diseases of the throat and nose are so clearly and concisely set forth.

ESSENTIALS OF DISEASES OF THE EAR.†

THIS is the second edition of a small work on diseases of the ear, prepared specially for students, and arranged in the form of question and answer. The first edition has had numerous additions made to it, both in the text and illustrations. The more recent surgical procedures in connection with ear diseases are described, and considering the space into which the descriptions are compressed, very lucidly. There are also numerous diagrams and drawings from sections and anatomical preparations made by the author, which will be found useful to the student.

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* Diseases of the Upper Respiratory Tract; the Nose, Pharynx, and Larynx. By P. Watson Williams, M.D. Lond., Physician to Out-patients and in charge of the Throat Department at the Bristol Royal Infirmary, etc. Third Edition. 1898. Bristol: John Wright and Co. 8vo., pp. 282. Price 8s. 6d.

† Essentials of Diseases of the Ear. By E. B. Gleason, S.B., M.D. Second Edition. 1898. London: Henry Kimpton, 82, High Holborn, W.C.

Dr. Gleason has contrived to impart a large amount of useful and accurate information in his small work, but we would rather have seen it in another form than that of question and answer.

PHYSIOLOGY, EXPERIMENTAL AND DESCRIPTIVE.*

THIS is a small work dealing with the main facts of physiology and histology, and constitutes a very good introduction to the subject. It is written in a light popular style, and is very well illustrated. At the same time we cannot make up our minds as to what class of readers the book is destined; it is somewhat too full for the lay and not full enough for the scientific student. In one or two particulars we notice a slight tendency toward sentimentality; for instance, the remarks made on the use of tobacco. A work on physiology is hardly the place for comparing the number of books that might be bought with the money spent on cigars. Again, there is a full table of poisons, giving their symptoms, antidotes, and treatment, which we rather think is out of place, as is also the chapter on nursing.

THE CEREBELLUM.†

THIS is a small work of fifty-nine pages, in which the author attempts to revive the idea that the cerebellum is the centre of the generative function. In the first page it is stated that "The principal reason why people who approach the study of the brain and its functions go away disappointed, discouraged, and appalled at the immensity of the subject, is because they allow themselves to be deluded in the first instance into a short but altogether wrong method of research They begin at the wrong end, and fondly hope they will be able to master the subject by taking somewhat of a retrospective view of its tenets rather than a progressive one." This is the mistake into which the author has fallen.

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* Physiology, Experimental and Descriptive. By Buel P. Colton. London: Scientific Press Limited.

† The Cerebellum. By H. Davies, M.D. London: Nichols and Co., Oxford Street.

DWELLING HOUSES: THEIR SANITARY CONSTRUCTION AND ARRANGEMENTS.*

We have received a copy of the fourth edition of Professor Corfield's excellent book on the elements of dwelling-house hygiene. It consists of six chapters, in which are considered the Situation and Construction of Houses, Ventilation, Lighting and Warming, Water Supply, Removal of Refuse Matter, Sewerage, Water-closets, Sinks, and Baths; and each chapter contains a concise statement of those elementary facts, a knowledge of which ought to be possessed by every householder, as well as by every medical man. We heartily commend the book to the notice of the profession. The book is well illustrated, and is clearly and ably written.

ON THE STUDY OF THE HAND FOR INDICATIONS OF LOCAL AND GENERAL DISEASE.†

This book contains a review of the several indications of disease, both local and general, which may be presented by the hand of a patient. It deals first with general points, such as moisture, temperature, colour, etc., and then with various conditions of the nails, and local diseases, such as eruptions and whitlows. The form of the hand and the alterations which may be produced by disease are then recorded. The book is of the slightest description, and we must admit that its contents are somewhat superficial. As far as it goes, however, it may be of use to practitioners in reminding them of the undoubtedly important hints which may often be obtained from the study of this part of the body.

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* Dwelling Houses: their Sanitary Construction and Arrangements. By W. H. Corfield, M.A., M.D. Oxon, F.R.C.P. Lond., Professor of Hygiene and Public Health in University College, London. Fourth Edition. London: H. K. Lewis. 1898.

† On the Study of the Hand for Indications of Local and General Disease. By Edward Blake, M.D. London: Henry J. Glaisher.

SHAW'S MANUAL OF THE VACCINATION LAW.*

We have received a copy of the sixth edition of Shaw's Manual of the Vaccination Law. The book is written more from the legal than from the medical point of view; nevertheless it is likely to prove of value as a work of reference to the members of our profession to whom a knowledge both of the history of the various Vaccination Acts and of their provisions may often be extremely useful. It contains a short historical summary of the various Acts in full, from that of 1867 onwards, with extensive commentaries thereon, and also certain other Acts which have a more or less direct bearing on the question. As far as we can judge it has been well compiled.

CHAVASSE'S ADVICE TO A WIFE.†
CHAVASSE'S ADVICE TO A MOTHER.‡

These well-known popular works have now attained respectively to the fourteenth and the fifteenth edition, which is abundant evidence of the demand for the kind of information they supply, as well as their fitness to meet that demand. A good deal of fresh matter has been added in each of the books in the present editions, particularly on the questions of antiseptics, infant feeding, and the hygiene of the nursery. The subject-matter has thus been brought up to date, whilst, at the same time, the editors have preserved the colloquial style successfully adopted by the author. In their new and improved form these books are an acceptable addition to household medical literature.

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* Shaw's Manual of the Vaccination Law. By a Barrister-at-Law. Sixth Edition. London : Shaw and Sons. 1898.

† Chavasse's Advice to a Wife. Fourteenth Edition. By Fancourt Barnes, M.D., F.R.S.E. London : J. and A. Churchill.

‡ Chavasse's Advice to a Mother. Fifteenth Edition. By George Carpenter, M.D. Lond. London : J. and A. Churchill.

TRANSACTIONS OF THE GRANT COLLEGE MEDICAL SOCIETY, BOMBAY.*

We have to acknowledge the receipt of a copy of the Transactions of the Grant College Medical Society of Bombay for 1897. The meetings during the year were principally taken up by a series of papers by Dr. L. B. Dhargalker on the Botanical Characters and Therapeutic Actions of the chief Indian Drugs, which will be found *in extenso* in the present volume.

VARIA.

We have much pleasure in stating that Dr. **Foxwell** has been appointed Bradshaw Lecturer, Royal College of Physicians, for 1899.

On the 6th instant, the formal inauguration of electric light took place at the Queen's Hospital. The occasion of the Annual Party was chosen as a fitting one for the ceremony. The whole hospital has been fitted with electric lighting on a liberal scale, and provision made for utilising the current for different forms of Medical and Surgical apparatus. Some of the latest forms of batteries for therapeutic and diagnostic purposes are being provided, and also appliances for surgical work.

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* Transactions of the Grant College Medical Society, Bombay, from January to December, 1897,

New Books, etc., Received.

Unripe Cataract. By **McKeown**. London: Lewis.

Medical and Surgical Review of Reviews. Edited by **Nathan E. Boyd**, M.D.

An Old Successful Treatment of Plague. By **J. V. Ramaswamy Nayudu**, L.M. & S. Madras: Sreenikothanum Press.

Vitality; an Appeal, an Apology, and a Challenge. By **Lionel S. Beale**, London: J. and A. Churchill.

Statistical Report of In-patients, 1897, General Hospital.

Atlas and Epitome of Operative Surgery. By **Zuckerhandl**. London: Rebman Publishing Company.

Atlas and Abstract of the Diseases of the Larynx. By **Grünwald**. London: Rebman Publishing Company.

Atlas of Legal Medicine. By **Hofmann**. London: Rebman Publishing Company.

Atlas of Syphilis and Venereal Diseases. By **Mracek**. London: Rebman Publishing Company

Letts' Medical Diaries. London: Cassell and Co.

Observations on Cardio-vascular Repair. By **Bezly Thorne**, M.D. London: J. and A. Churchill.

Treatment of Disease by Physical Methods. By **T. S. Dowse**, M.D. Bristol: Wright and Co.

Index Catalogue of the Library of the Surgeon-General's Office, Washington. Second Series, Vol. iii.

⁂ Authors can have reprints of articles at the following rates:—

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Notice.—*All Communications, Exchanges, and Books for review, should be sent direct to the Printers and Publishers, Messrs. Hall and English, 71, High Street, Birmingham.*

THE

BIRMINGHAM MEDICAL REVIEW.

FEBRUARY, 1899.

ORIGINAL COMMUNICATIONS.

NITROUS OXIDE AND ITS USES.*

BY W. J. McCARDIE, B.A., M.B., B.C. CANTAB.
ANÆSTHETIST TO THE GENERAL HOSPITAL AND TO THE DENTAL HOSPITAL, BIRMINGHAM.

In the comparatively short time allowed for papers it would be quite impossible to deal at all fully with all the aspects suggested by the title of my article, so I shall devote most attention to those points which are not much, if at all, noticed in the ordinary text-books on Surgery, and shall make free use of all the sources of information available to me, more especially of the writings of Silk, Hewitt, Hankel, Müller, and Turnbull.

I do not propose to describe in detail the technique of the different methods of administering Nitrous Oxide, or to discuss moot points in regard to their value, but rather wish to try and give an up-to-date and general idea of the properties and scope of this most valuable anæsthetic.

Nitrous Oxide, Laughing Gas, called by the French Protoxyde d'Azote, by the Germans Stickstoffoxydul or Lustgas, is an inorganic chemical compound having the formula N_2O, and is formed by the cautious heating of pure ammonium nitrate, which at a temperature of 170° C. begins to decompose into water and nitrous oxide. It is also formed when diluted HNO_3 is allowed to act upon pure granulated zinc, but the first method is the one generally employed in manufacturing the gas on the large scale. As it comes off, the gas is passed through a series of wash bottles, the first of which catches the water which comes over; the second contains a watery solution of sulphate of iron (1 : 8) which absorbs any nitric oxide which is formed by over-heating of the ammonium nitrate; the third bottle contains caustic soda (1 : 6), and often there is a fourth bottle containing a solution of soda in water (1 in 24) in order to remove any free chlorine and neutralize free acid. It is most important that the distillation take place at a temperature not exceeding 240° C., otherwise gases of different composition, including the especially dangerous and irritating impurity nitric oxide, are evolved, while at a temperature of 315° C. violent explosions take place.

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* A Paper read before the Queen's College Medical Society on January 11th, 1899.

An automatic arrangement is used for supplying the coal gas for heating the ammonium nitrate, according to the rate of production of N_2O. This obviates the danger of over-heating the salt. In early times the gas was stored in air-tight rubber bags. Now it is kept either in gasometers or under pressure as a liquid in steel or iron cylinders. The gas has the remarkable property of liquefying under fairly moderate pressure. According to Faraday at 0° C. a pressure of 30 atmospheres is needed for liquefaction, and at $-40°$ C. a pressure of only 10 atmospheres. By this change to liquid there is a shrinkage to at least $\frac{1}{120}$ of the volume of the gas.

The liquid is obtained by using a force-pump by which the gas is driven into specially-made and tested steel bottles which are surrounded by ice to counteract the heat evolved in condensation. The pressure of the liquid in Barth's cylinders is approximately 1000 lbs. to the square inch, and the proof pressure is about 3375 lbs. per square inch. The amount of the gas is calculated by weighing the bottle before and after filling it, the difference in the weight giving the amount of gas.

Fifty gallons of the N_2O as liquid weigh about 15 ounces. As it is kept under great pressure it has to be very carefully dealt with in transport, and fatal accidents have been known to occur in connection with its carriage. As a *gas* it is colourless, has a slightly sweetish taste and smell, and is about half as heavy again as air. It is not inflammable, but easily gives off its oxygen, so that it will rekindle a glowing chip of wood, and if mixed with an equal volume of coal gas will form an explosive compound.

The *liquid* is colourless, mobile, and of S.G. (as compared with water) ·936. Water added to it immediately freezes, the fluid gas evaporates and may become decomposed with explosive violence. It is very susceptible to slight changes of temperature, so that 1 vol. of the liquid at ·0° C. becomes 1·2 vols. at 20° C. If cooled down below $-115°$ C. it solidifies; this condensation often occurs if the gas escapes from the cylinder continuously for a short time and in small quantities; frost or snow is then often formed on the surface of the bottle and the outlet may be blocked by ice.

PHYSIOLOGICAL ACTION.

Nitrous oxide, like chloroform or ether, is a true anæsthetic, and, like them too, affords a good example of the "Law of Dissolution," which is put thus by Mitchell Bruce:—"When a drug affects functions progressively, the first to be affected are those most highly differentiated, most highly developed, that is to say, they are the last acquired by the individual and the last to appear in the species. The next in order to be affected are those functions next to the highest, and so on, till last of all the lowest functions, the vital ones of circulation and respiration, are affected. Again, when an anæsthetic drug in moderate doses excites a function, in full doses it paralyses it." So in anæsthesia by N_2O, there is first excitement of the mind, next of the motor centres, causing irregular non-purposive movement, and next of the functions of circulation and respiration. Then, in the same order, these functions are depressed, and if the administration be carried far enough there is dangerous depression of the vital centres and paralysis of the involuntary muscles. Function returns in exactly the reverse order to that in which it was lost.

It is probable that nitrous oxide acts most powerfully upon the central nervous system, affecting especially the cerebral cortex, and not so much the peripheral nerves. (Kemp.)

There was at one time great dispute as to whether N_2O acted as a true anæsthetic or as an asphyxiant, but it has finally been decided that it has no asphyxiating influence. Nitrous oxide darkens the blood corpuscles, and the cyanosis of the face and lips seen in the ordinary administration for dental purposes is due to this cause and also to the deprivation of oxygen. No experimental proof has yet been furnished that the gas is decomposed in the blood or forms chemical combination with the plasma or hæmoglobin. It enters the blood as nitrous oxide, leaves it as such, and probably circulates loosely in the plasma. The spectrum of oxy-hæmoglobin in the blood during full anæsthesia is not altered. Of course if an animal be killed by the administration of pure N_2O without oxygen, and the blood be then examined, we should see the spectrum of reduced hæmoglobin, but this is due to the effects of asphyxia following deprivation of oxygen. Kemp and Brush lately, in America, have proved that CO_2 in the arterial blood is greatly diminished during narcosis, so that there is no foundation for any theory as to the dependence of anæsthesia on the retention of CO_2 in the system. If, as Turnbull points out, N_2O were an asphyxiant, we should invariably narcotise our patients only when oxygen was replaced by nitrous oxide, but such is not the case, for as a matter of fact they are narcotised before the oxygen is exhausted.

The *heart's action* under the gas does not become much affected, and even when the anæsthetic is pushed until all respiratory movement is completely stopped the heart still beats, though of course gradually more weakly. Thus we have, even after respiration has ceased for perhaps a minute or so and the patient has become livid or almost black, time for resuscitation, for a few compressions of the chest will restore the breathing. In this respect the gas resembles ether, and, like it, almost always gives fair warning of danger to the patient. The circulation, then, during ordinary anæsthesia is well maintained, while after a time the blood pressure, at first markedly raised, sinks somewhat. There is a change in the calibre of the renal vessels corresponding to the change in arterial pressure. During complete narcosis renal secretion is rapidly diminished, and some albumen may appear in the urine, but it is moderate in amount and soon disappears after the suspension of administration. (Thomson and Kemp).

Lafont thought that a liver lesion occurred during anæsthesia, for in one of his patients, a diabetic, after narcosis there was an increase in the amount of sugar in the urine. He also examined the urine of himself and other healthy people both before and after narcosis, and found in the second hour after it glycosuria to the extent of 1·65 g.; in the sixth hour, 18·4 g.; on the third day, 2·95 g.; on the fourth day the urine was again normal. However, there are practically no serious sequelæ to the use of nitrous oxide.

A few words as to the *history* of the use of nitrous oxide may not be out of place. The gas was discovered by Priestley in 1776, and first recognised as an anæsthetic by Humphrey Davy in 1807, who by inhaling the gas relieved the pain of a wisdom-tooth cutting the gum. As a result of his investigations it was inhaled to ease the after pain of dental operations. The gas was kept in a rubber balloon or bottle, and was breathed through a wooden tube held between the teeth. The merit of applying the gas to produce anæsthesia belongs to Horace Wells, an American dentist, who, in 1844, at a demonstration given by another American, Dr. Colton, having seen a young man who had inhaled the gas fall down unconscious and damage his elbow and leg without being aware of it, recognised the possibility of painless operation, himself inhaled the gas, and while anæsthetic had a tooth drawn. He tried to popularise this idea, but did not succeed because of failures due to defective apparatus and methods.

Dr. Colton, however, followed up the discovery, but was likewise unsuccessful in popularising the anæsthetic, until in 1863 he induced a few practitioners to take it up, and in 1869 had administered the anæsthetic 27,000 times. Then he introduced it to Paris, and from Paris his apparatus was brought to London by a Dr. Evans, who gave the gas before the staff of the Dental Hospital, since when its use has become almost universal. Soon better apparatus was invented, the principle of the mouthpiece with valves and the practical exclusion of air leading to much greater success and the saving of gas.

N_2O is by far the safest anæsthetic we possess, and it is par excellence the anæsthetic for *Dental work.* The number of administrations of all kinds is estimated to amount to more than 10,000,000, with only 19 recorded deaths, *i.e.*, 1·9 per million. If we allow that all the fatalities are not published we might perhaps reckon a death-rate on the highest estimate of only 2 or 3 per million. (Hankel).

According to American statistics there have been in the United States 3,000,000 narcoses with 2 fatalities. Many of the deaths, too, have occurred from purely mechanical causes, such as the impaction of a tooth or foreign body in the air passages, neglect to undo corsets, etc. It has been, of course, chiefly used in dentistry, because it quickly produces anæsthesia, is safe, needs little or no preparation on the part of the patient, while recovery is very rapid and unmarked by awkward events. Now, although so much used, there are many medical men who do not know how to give nitrous oxide even for an ordinary dental operation. Dentists tell me that sometimes the family medical man has no idea how to administer the gas. He will come with his patient to the dentist's room, will perhaps examine the patient's chest, will take hold of his hand, put his finger on the pulse, and make a sign to the dentist to administer the gas for him. The doctor has been known to sit in a chair and look on.

There is at present controversy as to whether a dentist is entitled by his diploma and legally qualified to administer an anæsthetic. Certainly, considering the practice and teaching he has, the dentist is as well or better qualified to give gas than the ordinary medical man, though he is not probably so competent to deal with a pressing emergency, and if he had a fatality would, I imagine, incur grave censure from the coroner and public. When I was a house surgeon, I regret to say that I had no idea of administering gas—did not even know how the valves of the apparatus worked, and it was entirely a matter of chance or experiment as to whether I managed things rightly. I trusted to my senior, who was looking on, to set me right. I have known of other hospital residents in like plight, and it would be well if there were everywhere definite instruction and examination on the important subject of anæsthetics. In the country, and town too, many a small operation case which is now sent to hospital or anæsthetised by Chloroform or Ether, might be far more safely and advantageously operated on under the influence of N_2O, if knowledge of the merits and uses of Nitrous Oxide were more diffused.

In dental work there is one rule above all others to which attention must be paid, and that is as regards *posture*. Have the body almost upright in the chair and the head in the same line as the body. It may be more difficult for the dentist to get at the upper teeth than if the patient were more recumbent; but one has better command of the head and can tilt it forwards; again, the tongue comes forward, the blood, etc., collects in the floor of the mouth instead of running back, and the air passages are free. The semi-recumbent position is a very dangerous one. Practically most of the difficulties which are liable to arise are mechanical ones, and can be avoided by proper care and manipulation.

There have been many attempts to *Prolong Nitrous Oxide Anæsthesia in Dental Surgery.* Of course the difficulty occurs that the face piece has to be removed for operation, and that the operator must have free access to the mouth while anæsthesia is maintained. There have been adopted several more or less successful methods which may be divided into two main classes.

In Class I. attempt is made to prolong anæsthesia by continuing the administration through the nose. Either (*a*) by inhalation through a nose piece, or (*b*) by passing a catheter down the nose and directing a stream of gas into the Pharynx.

Mr. Alfred Coleman has invented, and lately brought forward, an apparatus for maintaining the inhalation through the nose. It consists essentially of an accurately fitting nose piece, which fits underneath an enlarged face piece. This nose piece is connected up with an ordinary gas bag. Gas is first given in the ordinary way, and when the face piece is removed the inhalation is continued through the nose, by means of the nose piece.

If the patient be a nose breather or can be induced at the first to breathe through the nose and continue doing so, all may go well, and the anæsthesia may be successful, but, if the nose or naso-pharynx, as so often is the case, is blocked up entirely or partially by rhinitis or adenoids, or if the patient be wholly a mouth breather from habit, anæsthesia is not likely to be obtained. However, Mr. Herbert Paterson, of St. Bartholomew's Hospital, has, after much experiment, improved Mr. Coleman's apparatus and method, and tells me he has had a large measure of success and has kept up anæsthesia for many minutes. Still I do not think the method can be made so uniformly successful as the others.

The other method of giving gas through the nose is that of Mr. Harvey Hilliard, who first administers nitrous oxide in the usual way till the patient is unconscious. Then a soft nasal tube or catheter, attached to separate tubing, which is connected with the cylinders, is passed through the nostril and a stream of gas at moderately high pressure is delivered into the pharynx.

The anæsthesia obtained by this method is very easily maintained when it is once established, but the difficulty is to rapidly and successfully pass the nasal tube. I have tried it on several occasions, and like some others have had discouraging results. The nostrils of most patients are by no means symmetrical inside, and may be more or less blocked by hypertrophied mucous membrane covering the turbinate bones, by septal deviations or adenoids, and rapid attempts to pass the catheter will many times only result in loss of time and nose bleeding. However in Mr. Harvey Hilliard's hands very successful results have been attained, and he has been able to prolong anæsthesia as long a time as was needed by the operator.

Class II. comprises efforts to prolong anæsthesia by passing a stream of gas through a tube into the mouth or pharynx. More than one attempt in this direction, but apparently unsuccessfully, was made years ago by Clover. Lately Mr. Coxon, a dentist of Wisbech, has passed a metal tube into the pharynx, and by means of a flow of gas into that cavity has been able to satisfactorily prolong anæsthesia. I have often successfully used this method. More recently still Mr. Madin, L.D.S., of this city, suggested that closure of the nares would aid to maintain anæsthesia, by preventing escape and consequent waste of the gas through the nares and by preventing entry of air which too much dilutes the gas. He and I have lately made extensive use of this method at the Dental Hospital, and with a very large amount of success. We have kept patients perfectly anæsthetised for 10 minutes while 25-30 extractions have been performed. I believe that Mr. Coxon himself about the same time independently adopted the same idea. These attempts to prolong nitrous oxide anæsthesia obviously have great value, for dental operations under chloroform are particularly dangerous, and moreover under ether are sufficiently awkward and inconvenient both for patient and operator.

In *Medicine* nitrous oxide has been recommended, by Vansant, alone or given with air, as part of a new and successful remedy for certain forms of headache. (*Philadelphia Med. J.*, May 7, 1898, abstract in *J. of Laryngology.*)

The nasal accessory sinuses are forcibly syringed out by a stream of hot dry air, or of nitrous oxide gas. Vansant found that frontal headaches in particular are relieved by this treatment, although some of the patients referred the pain to the temporal or vertical region, or even complained of pain all over the head, but worse in the frontal region. It was affirmed that the relief of headache of even many years' duration has been by this method of treatment so rapid and complete as to have been in some instances positively startling. The relief was in some cases permanent after one or two syringings, but in other instances the treatment was of necessity more prolonged:

Döderlein used a mixture of 80 per cent. of N_2O with 20 per cent. of oxygen for therapeutic purposes. He caused the patients to inhale the mixture, taking advantage of the combination of the pain subduing characteristics of N_2O with the oxydating and stimulating properties of the oxygen. He used it in asthma, painful bronchitis, tuberculosis, mitral stenosis, angina pectoris, headache, insomnia, many forms of mental disease, alcoholism, gout and rheumatism.

Now we come to the use of nitrous oxide, given with air or with oxygen, for the purposes of *General Surgery* apart from mouth operations. The gas is very safely used for a number of short operations lasting for a few minutes, such as opening and scraping abscesses, removal of adenoids, avulsion of toe nails, and may be given for much longer periods if experience and judgment be possessed by the administrator. What is wanted is some means of administering nitrous oxide without waste and with a comparatively moderate and continuous amount of air. With the present apparatus it is difficult to do this. The fact that the air contains 79 per cent. of inert nitrogen much complicates matters. Hence, as will be presently mentioned, the advantages of adding pure oxygen instead of air.

In the United States, prolonged operations, such as excision of the breast, laparotomy and hysterectomy have been performed under the influence of N_2O. It is on record that C. A. Brackett, of Newport in America, as long ago as 25 years, administered the gas for 30 minutes during an amputation of the breast by Dr. Squire, since, owing to the debilitated state of the patient, he dared not give ether. This case well illustrates the safety of the gas.

"Dr. Marion Sims, a well known American surgeon, used it in difficult and prolonged operations (e.g., ovariotomies), requiring 30, 40, 59, and 60 minutes, and in one case 1 hour 50 minutes, and always with most satisfactory results." (Turnbull). Turnbull remarks that the nature of the operation which Marion Sims performed, gave him strong reasons for wishing to avoid the vomiting and retching following the use of ether.

Thus the possibilities of N_2O as an anæsthetic in major surgery seem well assured, though the difficulties of administration for long periods are at present, at any rate, great. Some hundreds of gallons of gas must have been used in the longer cases just quoted.

Dr. Hewitt in his book on anæsthetics explains the advantage of giving pure oxygen, rather than air, with the nitrous oxide.

"If we administer with the N_2O a percentage of air which will prevent lividity and other awkward symptoms, we shall in most cases also prevent deep anæsthesia, owing to the small percentage of N_2O which would be possible in such a mixture. For example, a mixture of 40 per cent. of air and 60 per cent. of N_2O would contain about 8 per cent. of Ox. and about 32 per cent. of inert nitrogen; and although the 8 per cent. of oxygen would suffice to nearly, or completely, preserve the natural colour of the patient's face and to suppress clonic spasm, yet the 60 per cent. of N_2O would probably be insufficient to produce tranquil anæsthesia.

"If, however, instead of using air for oxygenating purposes we employ oxygen, we shall be able to replace the 32 per cent. of useless nitrogen by a corresponding quantity of useful N_2O, and the proportion of the latter will now rise to 92 per cent.

"With such a large percentage of N_2O anæsthesia is almost certain to become established, and the percentage of Ox. remaining the same as in the N_2O and air mixture, cyanosis and other evidence of diminished blood oxygenation will be prevented."

Paul Bert, in France, in 1878, experimentally found that by doubling the atmospheric pressure during administration the blood would receive just as much N_2O as when the gas was administered pure at ordinary pressures, while the normal amount of air would be breathed. By substituting oxygen for air he found that an additional pressure of about one-fifth of an atmosphere would suffice, and a mixture of 85 per cent. of N_2O with 15 per cent. of Oxygen was successfully used as an anæsthetic under increased pressure. Bert had a large chamber of sheet-iron built to hold patient, operator, and anæsthetist. The pressure was by special apparatus raised as just mentioned, and for hours patients were kept fully narcotised and the largest operations were undertaken. This method of anæsthetisation was much tried in France, and it was even proposed to build a huge chamber for a university clinic, large enough to contain a professor and the whole of his class, about 300 in number, during operations. Many obvious drawbacks led to a gradual discontinuance of Paul Bert's method, and more recently it has been possible to administer N_2O mixed with oxygen under the ordinary atmospheric pressure. If given by the above method with a proper amount of oxygen the nitrous oxide anæsthesia was well-nigh perfect. Colour, pulse, and respiration were normal, and a perfect muscular relaxation was obtained. The Germans call the mixture "Schlafgas," because of the sleep-like anæsthesia resulting from its use.

Dr. Hillischer, a Viennese dentist, was the first to employ a mixture of Nitrous Oxide and Oxygen under normal air pressure, and he attained a very large measure of success, but his apparatus was complicated. He devised a means for regulating the supply of oxygen according to the type and needs of the patient —a very necessary provision, seeing that patients vary much in the quantity of oxygen needed to supply their respiratory wants. Dr. Hillischer in his dental practice administered the mixture to many thousands of patients, without exceptions, with all sorts and conditions of lesions, including respiratory and cardiac, and met with most unqualified success.

Dr. Hewitt, of London, has in recent years devised a much more portable, convenient and efficient apparatus, which is very commonly used in London now in dental work, for the mixture is preferable in every way to nitrous oxide alone.

Another illustration of the safety of gas and oxygen may be mentioned here :—Martin, of Lyons, kept a dog breathing a mixture of 85 per cent. of N_2O and 15 per cent. Ox. under a pressure of 110-120 cm. Hg. for three consecutive days without any untoward effects during or after narcosis. The animal was quite in his normal condition within half an hour of removal from the chamber.

Döderlein administered the mixture to pregnant women and women in childbirth. In the latter cases the pains of labour were abolished and forceps applied without any great difficulty.

The average length of the induction of Anæsthesia is found to be about two minutes, and the average time taken for recovery less than two minutes. Uterine contractions and the life of the fœtus, as shown by experiments on animals, are in no way disturbed by the inhalation. If the animal were killed by N_2O without allowing it any oxygen at all, the young, if removed by Cæsarean section, could always be brought to breathe.

Recently, Drs. Kemp and Brush in America have experimentally investigated the action of N_2O, and Dr. Kemp has come to the following conclusions with regard to the quantity of Oxygen necessary to sustain life during anæsthesia. He says that "Anæsthesia deep enough to prevent pain on stimulating a sensory nerve is obtained in most instances when the blood is carrying about 8·5 per cent. of oxygen—that the minimum is about 7·9 per cent., and that in some cases we get perfect anæsthesia with as high a per cent. of Ox. as 16·8. The latter figure is practically within the limits of the amount of Ox. normally present in the blood and precludes the supposition of asphyxia. The lowest amount of Ox. obtained (7·9 per cent.) is just about the boundary where changes of metabolism begin to occur, but is well within the safety limit." (Extract from an abstract by Bellamy Gardner in *J. of Brit. Dental Assoc.*, February 1898).

The mixture of N_2O and O is better in every way than N_2O alone, and especially for delicate little operations like incision of the tympanum, removal of aural or nasal polypi, and eye operations, owing to the absence of muscular spasm and jactitation. It is most useful for the dilatation of urethral strictures. It is for the same reason most excellent for the examination of a rigid, painful, or tender abdomen, and in many gynæcological examinations, *e.g.*, the bimanual. I have administered it several times most successfully for a period of a quarter of an hour, and once for twenty-four minutes during an operation for removal of a urethral caruncle and plastic operation on the vulva. It is the most useful Anæsthetic for consulting-room work.

Women, old people, and children take the mixture well, but very strong men and alcoholics of either sex may prove rather refractory, as indeed they will with N_2O alone, Ether or Chloroform.

Nitrous oxide administered previously to the inhalation of ether, is of great advantage. It greatly shortens the induction of anæsthesia, minimises or entirely obviates the excitement, rigidity, and struggling, so liable to occur before full narcosis, and relieves the patient of that sense of irritation and suffocation caused by the inhalation of ether vapour.

There are two ways of using nitrous oxide as a preliminary to etherisation. 1. Giving the gas to the full anæsthetic degree and in the usual way, then continuing with a Clover's or Ormsby's inhaler, during the change allowing perhaps a breath or two of air, according to the type of patient dealt with. 2. Merely allowing a few breaths, *i. e.*, part or the whole of a large bagfull of gas connected with Clover's apparatus, gradually turning on ether vapour until the patient is under, and then changing the larger for the smaller bag. No air is to be allowed if possible until anæsthesia occurs. This latter method needs very little gas and no change of apparatus. If one can induce the patient to take half-a-dozen deep breaths of nitrous oxide, he will not be conscious of the irritating effects of ether vapour, whose proportion may thereafter be rapidly increased.

It may be confidently asserted that the great advantages which nitrous oxide presents as an anæsthetic are not sufficiently utilised at the present day. Many short operations which last only a few minutes, but for which ether or chloroform is often given, may—indeed, should—be performod under nitrous oxide, alone or mixed with oxygen; while again, there are many operations and examinations which last for periods up to 15 or 20 minutes which may be sometimes conveniently and always far more safely performed under the influence of the mixture than under ether or chloroform.

Finally, as has been well remarked by Bellamy Gardner—"It is the duty of the anæsthetist to render the patient insensible to pain with as little damage to the physiological processes as possible"—and N_2O, or, still better, $N_2O + O$, fulfils this indication far better and more fully than does any other general anæsthetic—since the dangers of chloroform and after effects and dangers of ether are entirely avoided.

THE MIDDLEMORE POST GRADUATE LECTURE.

INFLAMMATIONS OF THE CONJUNCTIVA.

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A LARGE proportion of the patients who apply to an Eye Hospital for treatment suffer from some form of inflammation of the conjunctiva. Probably a larger proportion still of those who consult the general practitioner are suffering from some disturbance of this mucous membrane. It has therefore seemed to me a useful subject to take for a Post Graduate lecture. The liability of the cornea to become seriously involved in *some* of the more serious inflammations, makes it very important that all surgeons should early recognise the various types met with and apply appropriate treatment as soon as possible. If this was always done there certainly would be a decrease in the number of those applying for admission to Blind Asylums. Moreover, as the whole of the conjunctiva is visible it does not need any very special training to follow its various inflammations.

The conjunctiva may be conveniently divided into three portions—the palpebral, the ocular, and that of the culs-de-sac, which latter are reflections of the membrane from the eyeball to the eyelids.

The palpebral conjunctiva covers the under surface of the lids and is continuous with the skin at their free margins. It also extends along the canaliculi into the lachrymal sac. It is closely adherent to the underlying ~~tissue, and its~~ surface is covered with stratified epithelium under which there is connective tissue, lymphatic vessels, and numerous blood-vessels and nerves.

The ocular conjunctiva covers the anterior third of the globe. The scleral part of it is thin, nearly transparent, and freely movable over the sclerotic and capsule of Tenon. It is thicker at the corneo-scleral junction, where it is called the limbus. Here the blood-vessels end in loops which in certain forms of inflammation extend over the cornea. Internally it forms into a fold called the plica semilunaris, which is looked upon as a rudiment of the membrana nictitans so well developed in birds.

The corneal portion consists altogether of epithelium. The conjunctiva obtains its blood supply principally from the muscular and lachrymal branches of the ophthalmic artery.

The culs-de-sac, often called the fornices or retro-tarsal folds, are loose reflections of the membrane which join the ocular and palpebral portions. They shut off the cavity of the orbit, and from their laxity allow a free movement of the eyeball. They form good hiding places for foreign bodies and germs, especially the upper one, which is difficult to completely expose. The membrane is thicker here than elsewhere, and its epithelium is differently arranged.

Inflammation of the conjunctiva is indicated principally by alteration in colour. In its normal condition it is almost transparent, and the sclerotic is easily seen through it. When inflamed, however, its blood-vessels rapidly increase in number and size, and the sclera is quickly obscured through the eye becoming bloodshot. The conjunctival vessels can be easily distinguished from deeper sclerotic injection by the facility with which the vessels can be moved over the globe; but any severe inflammation of the conjunctiva is accompanied by more or less deeper injection, because of the numerous anastomoses between the two sets of blood-vessels.

For clinical purposes conjunctivitis may be divided into three forms—hyperæmic, catarrhal, and purulent, though there are several special forms which will have to be described, such as the granular, follicular, and membranous types.

HYPERÆMIA.

Hyperæmia of the conjunctiva is either acute or chronic. The former is usually the forerunner of some more severe inflammation, such as iritis, or is caused by a foreign body imbedded in the conjunctiva or the cornea. It is characterised by the appearance of a number of straight vessels running towards the cornea, showing that the small arteries are injected. There is generally photophobia and lachrymation, but rarely any marked secretion of mucus or pus. The eyelids and cornea should always be carefully examined for any foreign body, which, if found, must be removed with the least possible damage to the surrounding parts. A few drops of a 2 per cent. solution of cocaine or holocaine previously applied will render the operation quite painless, and will also rapidly contract the dilated vessels; but this treatment in inexperienced hands has its dangers, as the anæsthesia of the parts makes the patient for the time tolerant of any amount of interference. I have often had considerable subsequent trouble with patients from this cause. All the treatment necessary is protection of the eye from light, cold, and dust, and drops containing 1 per cent. of the hydrochlorate of cocaine. If there is any mucous secretion a mild boracic or biborate of soda lotion will soon check it. If iritis is suspected atropine ought to be applied at once in order fully to dilate the pupil and contract the vessels of the iris.

Chronic hyperæmia is very common. The veins of the conjunctiva are enlarged and tortuous, the palpebral portions of the membrane being more affected than the ocular. The patient complains of a feeling of heat, itching, and frequently of dryness, due to diminution of the normal secretion. Often there is an unpleasant sensation as of grit in the eye. All these symptoms are aggravated by exposure to cold, wind, smoke, and excessive indulgence in alcohol. If untreated the conjunctiva becomes thickened, and the papillæ hypertrophied. Eversion of the lids will show that the palpebral portion has lost its smooth appearance, being covered with minute red dots. It will often be found that some refractive error or loss of muscular balance is at the root of the trouble, and in all cases these should be carefully looked for. Chronic hyperæmia is also frequently associated with chronic inflammation of the lachrymal passages or a catarrhal condition of the nose, which, if present, must of course be appropriately treated. The gouty diathesis is also a common cause.

The patient must avoid any form of infected atmosphere. If intolerance of light is marked smoked glasses are useful to be worn for a time. Prolonged, close work, especially by artificial light, gas being the worst, must be avoided. Mild astringents are most suitable to be used as drops or lotion, boracic acid, biborate of soda, or subacetate of lead being the best. If there is any discharge something stronger may be prescribed, such as the sulphate or chloride of zinc, alum, or sulphate of copper. Cocaine can be combined with any of these, and lessens their irritating qualities. They must all, however, be used in very weak solution. Tincture of opium is an old and, in some cases, a useful remedy. When heat and itching are prominent symptoms, spraying the eyelids with cold water, to which a little rectified spirit has been added, will often give great relief.

CATARRHAL OPHTHALMIA.

Catarrhal ophthalmia is more frequently met with at certain times of the year, especially in the spring and autumn, when inflammations of other mucous membranes are more prevalent. It is frequently epidemic, and as it is undoubtedly infectious it probably depends on some infecting germ. Dr. Weeks several years ago discovered a bacillus which is frequently found to be present in these cases, cultures of which produce the disease when applied to a healthy eye. In many epidemics, however, only the pneumococcus can be found, and it is therefore probable that various infecting germs may produce a catarrh of the conjunctiva showing identical clinical symptoms. Leucorrhœal discharges in vaginal inflammation seem especially prone to infect the conjunctiva. No doubt in all patients infected a suitable ground for the germ is present. In the earlier stages of the disease and in mild attacks only the palpebral conjunctiva, and that in the culs-de-sac, is affected. The eyelids are red, enlarged, and smooth in appearance. Later on the ocular conjunctiva may participate in the inflammation, and in very severe cases even hæmorrhages occur. At first there is copious lachrymation, itching, and burning of the eyes; as the inflammation gathers force the lids become œdematous and streaks of mucus can be seen floating in the tears. Later this mucous discharge increases in amount, and in bad cases it becomes partly purulent. Very little actual pain is present, and if this is complained of it is an indication that either the cornea or iris is participating in the inflammation. The disease usually runs a course varying from about six days to a fortnight, but often a chronic catarrh is left behind which may be troublesome for many weeks.

One of the most important essentials in treatment is absolute cleanliness. In the earlier stages a mild antiseptic lotion applied every few hours is all that is necessary. If heat and itching are prominent symptoms relief will be obtained by applying over the closed lids small pieces of lint saturated with iced water; when this is not well borne hot water applied in the same way will sometimes be effectual. A little vaseline or hazeline ointment applied to the lids at night will prevent gumming of the lids, which is decidedly prejudicial if allowed to take place.

When the secretion of mucus or muco-pus becomes copious, stronger astringents and antiseptic applications must be resorted to, and the strength of the drug selected should depend on the amount of discharge present. In the milder cases sulphate, choride or sulphocarbolate of zinc will be sufficient, but when the discharge is copious and purulent nitrate of silver is the sovereign remedy. The best method of application is to brush the eyelids thoroughly with a 5 to 10 gr. solution every alternate day, carefully washing the eyelids afterwards so that the cornea may not be irritated. It is often impossible to carry out this treatment, and if so, the patient must himself apply drops to the eye twice daily, containing 1 to 2 grs. to the ounce of nitrate of silver. Latterly formalin has been strongly recommended, in solutions varying from 1 to 2 in the 1000. The patient must be instructed to avoid irritating atmospheres, artificial light, and close work. Confinement to the house is not necessary, in fact it is beneficial to pass a good deal of time in the open air protected by suitable glasses. The infectious nature of the disease must always be borne in mind and directions given that the same towels, handkerchiefs, basins, etc., must be used for no one else in the house.

PURULENT OPHTHALMIA.

Purulent Ophthalmia is one of the most dangerous diseases to which the eyes are liable. A very large proportion of the inmates of our Blind Asylums have lost their sight from this cause. It is usually due to infection from the gonococcus, first discovered by Neisser. Recent investigations have shown that other micro-organisms may produce a purulent ophthalmia, but there can be little doubt that in the very severe cases the gonococcus is present. The infection is usually carried by the hand of the patient directly from the urethra or vagina to the eye, but it is sometimes conveyed by towels or dressings. When infection has taken place the symptoms commence in a few hours or days, according to the intensity of the infection. The lids become red-hot, and swelling rapidly takes place, so that the patient has difficulty in opening them. The tarsal conjunctiva and that in the region of transition is rapidly infiltrated and looks granular. The ocular conjunctiva soon follows suit and becomes chemosed so that the cornea is overlapped. At first there is a thin discharge, often sanious, but soon this gives way to the second stage of the disease in which thick pus is found in large quantities. The hardness of the lids now often diminishes, but not the general swelling and chemosis which generally increase. This is the dangerous stage because of the liability of corneal infection or strangulation. The cornea must be frequently examined and if the swelling is so great that this is impossible it will be wise to freely divide the external canthus. This operation is beneficial in two ways, it not only enables the surgeon to examine the cornea and apply his remedies more effectually, but it relieves the pressure on the eye itself.

The purulent stage lasts from three to six weeks, but it is often followed by a chronic blenorrhœa. If the cornea becomes involved at first it looks dull and steamy, and this appearance is soon followed by yellow infiltrations, which break down and ulcerate; occasionally the whole cornea becomes necrotic and practically melts away. In bad cases the cornea is almost always affected, and sight, in spite of all treatment, is either lost or seriously damaged. If the ulcers form late in the disease prognosis is much more favourable.

When one eye only is affected the other must at once be hermetically sealed. This is best done by a Buller's shield, which consists of a good-sized watch-glass set in sticking-plaster. The advantage of this method is that the patient is not deprived of vision. As regards treatment in the earlier stages of the disease, strong astringents must not be used. Frequent cleansing with a boracic acid or perchloride of mercury lotion is all that is necessary, combined with iced-water pads to the eyelids. If the injection and infiltration is very severe a few leeches may be applied to the temple. When the purulent discharge has developed nitrate of silver is the best remedy. The lids should be brushed with a solution varying from 5 to 20 grs. to the ounce, the strength used being governed by the amount of the discharge and the intensity of the inflammation. This should be done at least every 24 hours. It destroys the superficial epithelium, and with it the germs which have made it their resting place. After its application cold should be applied to allay the consequent intense irritation. Some surgeons prefer mitigated stick, which is made of a mixture of nitrate of silver and nitrate of potash in varying proportions. It is most important that the eye should be constantly washed out with an antiseptic solution between the application of the silver, and if the ordinary eye douche for doing this is not obtainable a very good substitute in the shape of a small retort is sold for the purpose by Messrs. Harris and Co. Glass syringes are often used, but are dangerous, and not so useful as the douche. As the discharge lessens the interval between the application of the silver must be increased. In the later stages a solution of formalin, 1 in 2,000, is often prescribed. Permanganate of potash, 3 to 6 grs. to the ounce, is also strongly recommended. If the cornea becomes implicated, cold applications must be discontinued and warm fomentations substituted. If ulcers form near the margin, eserine or pilocarpine drops should be prescribed, as they contract the pupil, and in that way render a prolapse of the iris, if the ulcer perforates, less liable. These drugs also tend to increase the nutrition of the cornea and reduce the tension of the eyeball. If the ulcer is central, atropine is the drug indicated. Even if the cornea becomes involved, energetic treatment to the conjunctiva must be continued. In the last stage of the disease, when all discharge has ceased and thickening of the membrane is alone left, occasional touching of the parts with a smooth stick of sulphate of copper will hasten resolution.

Ophthalmia Neonatorum, although a purulent conjunctivitis, requires special consideration. It has been estimated that about one-quarter of the blind people in the world have lost their sight through this disease. It is practically always caused by infection during the passage of the child's head through the vagina. The most severe cases are usually due to infection by the gonococcus, but all pathological discharges from the vagina are liable to set up severe purulent ophthalmia, and in many cases microscopic examination fails to find the gonococcus. The pneumococcus is generally present in large numbers. The course and symptoms of the inflammation are much the same as previously described in cases of purulent ophthalmia. The swelling of the surrounding tissues is usually more marked, and the discharge more copious. As regards treatment, precisely the same principles hold good as recommended in ordinary purulent ophthalmia. What I especially wish to lay stress upon is that the disease is almost entirely preventible. In 1882 Professor Credé published statistics showing that when the newly-born child's eyes are treated antiseptically the proportion of cases of ophthalmia occurring is reduced to a minimum, and that in cases where, in spite of such precautions, the inflammation does take place, it runs a milder course and corneal complications are the exception. In the large maternity hospitals on the Continent experiments have been made with various drugs, and I think it is now generally admitted that nitrate of silver gives the most satisfactory results. A drop or two of a 2 per cent. solution applied to the eyes immediately after birth gives almost certain immunity from this terrible scourge. It causes very little irritation, and bearing in mind the great advantages gained I cannot but think that we are culpably behindhand in England in failing to use silver or some other powerful antiseptic as a routine treatment. Of course this is a matter altogether in the hands of the general practitioner, and ophthalmic surgeons can only point out the disastrous results that constantly come under their notice through failure to comply with it.

PHLYCTENULAR CONJUNCTIVITIS.

Phlyctenular Conjunctivitis is a very prevalent inflammation. In appearance the phlyctenule is red and conical, varying much in size. Sometimes only one or two are seen, but usually a number are present. The most frequent situation is at the limbus, but they occur on all parts of the ocular conjunctiva and the cornea is frequently implicated. A phlyctenule consists of clusters of round lymphatic cells immediately beneath the epithelium, which latter is very quickly shed leaving a small ulcer on the apex of the phlyctenule. The cells rapidly break down until finally the ulcer sinks to the level of the healthy conjunctiva, after which healing quickly takes place, the ulcer being covered with new epithelium. Dilated vessels are found in the neighbourhood of the efflorescence, but the other portions of the membrane are usually unaffected. When the phlyctenules are few in number they are generally large in size, and *vice versa.* If they occur on the cornea the exudation is usually between Bowman's membrane and the epithelium, and on breaking down there is no loss of corneal substance, healing taking place without leaving any scar. Occasionally, however, the true cornea is infiltrated, in which case a permanent opacity is likely to remain. In rare cases the exudate is spread over the surface of the cornea, and its appearance strongly simulates that of pannus. This condition has been named pannus scrofulosus.

The subjective symptoms are very variable, and often do not correspond to the actual condition present. Photophobia, pain, and spasm of the lids may be very severe in cases when little is to be seen, while other patients with much more marked objective symptoms complain but little; as a rule there is very little mucus or muco-purulent discharge unless the palpebral conjunctiva is involved, when the discharge may be considerable; in such cases eczema of the lids and face is often a troublesome complication. Spasm of the orbicularis combined with swelling of the conjunctiva sometimes causes complete entropion. In most cases the prognosis is favourable, but recurrences are very probable until the patient has reached adult age. In a large proportion of cases the disease, which is essentially one of childhood, has its origin in the scrofulous diathesis, though any marked lowering of health, especially that which occurs after the various exanthemata, is likely to cause an attack. Insufficient nourishment, improper feeding, bad hygienic surroundings and dirt are all predisposing causes, so that it is among the poorer classes in large towns that the disease is most prevalent.

Treatment depends largely on the symptoms. In mild cases, where pain, infection of the eye and photophobia are not marked, the application of irritants, such as calomel and the yellow precipitate ointment, in strength varying from 2 to 7 grs. to the ounce, hastens resolution. Of these calomel is the least irritating. They should be applied once daily. When the cornea is ulcerated and pain and photophobia are marked, a sedative line of treatment must be adopted; atropine, scopolamine, cocaine, and warm poppy-head or belladonna lotion giving most relief. General treatment is of much importance. Diet should be strengthening and given at regular intervals. Open-air exercise in spite of symptoms must be insisted upon, and it is a mistake that is often made to keep the patient in a dark room because of the dread of light. If possible a change to the sea when the severity of the inflammation is over is most desirable.

Internally, prolonged administration of cod-liver oil, maltine, and iodide of iron is beneficial, in some cases other preparations of iron combined with arsenic and quinine seem more efficient.

FOLLICULAR CONJUNCTIVITIS.

Follicular Conjunctivitis is a catarrh of the conjunctiva, the distinguishing feature of which is the formation of a number of granules in the region of transition. In appearance they are oval or roundish transparent bodies, no larger than one to one and a half millimetres in diameter. They have a faint yellowish colour, and are arranged in rows. There is not usually much accompanying change in the membrane. Papillary hypertrophy is absent or slight, and the tarsal conjunctiva is never implicated. These granules consist of circumscribed collections of adenoid tissue. The condition often follows previous inflammations, and according to Stephenson it is frequently only a symptom of adenoid activity. I have often noticed that it occurs in patients who are the subjects of adenoid growth in the naso-pharynx. The disease, though very persistent, rarely causes severe symptoms, and never destructive changes of the conjunctiva or pannus. It is very common in schools. The majority of those affected complain of no symptoms, examination of the eyelids by a surgeon alone disclosing the presence of this condition. In these cases treatment is ineffective and unnecessary. When there are symptoms of conjunctivitis, astringents such as sulphate of copper, sulphate of zinc, glycerine of tannic acid, and other similar remedies may be tried.

GRANULAR OPHTHALMIA.

Granular Ophthalmia is one of the most severe inflammations that can affect an eye. Widely different opinions are held as to its cause. The majority of observers consider that the disease arises by infection, although no special microbe has as yet been discovered Others deny contagion, and look upon trachoma as the manifestation of a dyscrasia. It is very prevalent in some countries, especially those lying low, Russian Poland suffering severely. In our own kingdom, Ireland is a centre for it, and the majority of patients attending ophthalmic hospitals in England are of Irish or Jewish extraction. There is no doubt that overcrowding and dirt of all kinds act strongly as predisposing causes. Trachoma is usually chronic in its course, and is due to a morbid deposit into and hypertrophy of the conjunctival tissue, which in time cause an actual destruction of the conjunctiva, followed by the formation of cicatrices. In the earlier stages the patient complains of sensitiveness to light, lachrymation, and heaviness of the lids, due to swelling. Eversion of the eyelids shows that the conjunctiva is reddened, thickened, and uneven in appearance, due to enlargement of the papillæ. Some gray or yellow semi-transparent bodies are seen pushing their way between the hypertrophied papillæ, and often encircled by them. These are the true graulations, which have been likened to sago grains. It is often very difficult in the earlier stages to distinguish them from follicular granulations. They are, however, larger, and have a tendency to become confluent, and the conjunctiva covering the tarsus is frequently involved. A certain amount of ptosis is nearly always present, and keratitis is frequently a complication. In mild cases the conjunctiva of the eyeball is unaltered, but in more severe instances it becomes infected, and in rare cases granular. In the most severe inflammations pannus usually occurs. It is a newly-formed vascular tissue, superficial in situation. It generally commences at the upper margin of the cornea, gradually spreading towards the centre. Ulcers frequently occur along the advancing border. Vision, of course, is seriously affected, and, if the pupillary area is covered, almost lost. By some, pannus is looked upon as being a form of keratitis, caused by the friction of the roughened eyelids over the cornea. Although this may aid in its production, in many cases it is a granular inflammation of the cornea itself. Especially is this the case when it occurs early in the disease.

As the hypertrophy and granular exudation into the conjunctiva disappear, a gradual cicatricial contraction of the membrane takes place, and the degree of this depends largely on the severity and duration of the previous inflammation. White bands run across the tarsus generally parallel to its free border and the conjunctiva left between these bands becomes thin and pale. In the fornix the membrane becomes contracted and of a bluish-white colour, and the normal folds so important for the free movements of the globe disappear. Trichiasis and entropion are very troublesome after-effects of trachoma; they result from the contraction of the new cicatricial tissue in the eyelid. The upper lid is most frequently affected, and if everted a narrow grooved white line can generally be observed about two millimetres above and parallel to the free border. The furrow is caused by a bending of the tarsus. In addition to the contraction of the scars inflammatory changes in the tarsus itself assist in providing the grooving. If untreated, corneal troubles soon develop from the constant friction of the eyelashes against it, and the patient is always in a state of extreme discomfort. Operative interference then must be resorted to, and it fortunately is usually very successful. especially the operation devised by Van Milligan, which consists in splitting the free border of the lid and transplanting a piece of mucous membrane from the mouth into the wound. The eyelashes are in the external flap and the transplanted tissue acts as a wedge and also increases the mucous surface of the eyelid. Zerosis of the conjunctiva is another very serious complication in such cases: the membrane loses the power of secreting its own lubricating material. The parts then become dry and brittle and the lachrymal fluid does not adhere to the eye. In the worst cases this spreads over the whole conjunctiva and cornea and the eye becomes incurably blind and is a constant source of pain and discomfort.

The principal objects of treatment of trachoma are to lessen the discharge, to aid the disappearance of the hypertrophy of the conjunctiva, and to cause absorption of the granulations. When these are numerous, and the case is seen early, expression of the granulations by means of one of the many forms of roller forceps is most successful. The conjunctiva and granulations are seized between the blades of the forceps and forcibly drawn through the rollers. Frequent applications of nitrate of silver and the sulphate of copper stick are also largely used. In the earlier stages, when there is considerable discharge and when the cornea is affected, silver is the best application, but later in the course of the disease, when the discharge has lessened and the hypertrophy is marked, daily touching with sulphate of copper is the best remedy. Corneal complications must be treated by atropine and other suitable applications, according to the symptoms, but bandaging must be avoided. During the course of the inflammation the eyes must be constantly cleansed with antiseptic lotions. When swelling and congestion of the lids is marked, free scarification will often afford considerable relief. Touching the granulations with galvanic cautery is also advocated, but my experience of this treatment has not been satisfactory.

Pannus should not be directly interfered with unless it is unusually dense. In very severe cases treatment by jequirity is sometimes practised. The lids are painted two or three times a day with a solution of jequirity. This drug excites a violent inflammation, which continues for a few days: on its subsidence considerable clearing of the cornea often takes place. There is risk in pursuing this treatment unless the cornea be completely covered by the pannus, and on no account can it be applied except in old cases where active inflammatory symptoms have quite disappeared.

MEMBRANOUS CONJUNCTIVITIS.

Membranous Conjunctivitis is a somewhat uncommon form of inflammation. For clinical purposes it is usual to divide it into two groups—croupous and diphtheritic, although it is often extremely difficult to distinguish between them. A distinct membrane is always found, usually limited to the palpebral conjunctiva. The disease evidently depends on some specific cause, and the Klebs-Loeffler bacillus should be looked for, though its absence does not necessarily exclude the possibility of the inflammation being diphtheritic. In both forms the onset of the disease is evidenced by pain, redness, and swelling of the eyelids, with a slight purulent discharge. A greyish membrane in the substance of the conjunctiva soon appears, which may cover the whole surface or be limited to isolated patches. If the membrane is forcibly removed a raw surface is left underneath. After a few days the membrane peels off, and is usually followed by a purulent discharge, but in some cases it forms over and over again.

In the diphtheritic form the lids are harder, and eversion of them is difficult or impossible. The infiltration is firmer, deeper, and more intimately adherent to the conjunctiva, which often has a pale appearance as if completely emptied of blood. When the membrane is cast off large patches of the conjunctiva are often found to be destroyed. The principal danger, as in purulent ophthalmia, is lest the cornea be affected. In severe inflammation this unfortunately frequently occurs, and permanent damage to vision follows. The discharge is contagious, and the greatest care must be taken to keep the patient isolated and to protect the sound eye if only one is involved. In the earlier stages of this disease treatment must be limited to keeping the parts clean with a boracic or perchloride of mercury lotion, and if there is much swelling and pain cold applications give relief. These latter, however, must be omitted at once when the membrane forms lest the nutrition of the parts should be interfered with. In this stage warm applications are usually indicated. When the membrane has been cast off and the eyelids have become soft, if there is much purulent discharge, nitrate of silver may be used, but not in strong solution. Several cases have been reported where serum injections have had marked effect on the disease, and in undoubted cases of diphtheritic inflammation they certainly ought to be tried early.

VERNAL CATARRH.

Vernal Catarrh is a rare disease. It usually affects young children, and the male sex is more liable. It was described by Alt in 1854, but Saemisch, in 1876, was the first to draw prominent attention to it. It makes its appearance in the spring or early summer, and remains during the warm weather, becoming quiescent in the winter only to return in a more pronounced manner in the following spring. The disease tends to run a slow chronic course recurring for many years, but it usually disappears after a varying time. It is not dangerous to vision, but it leaves the conjunctiva somewhat changed in structure.

Its appearance is very characteristic. The conjunctiva is unevenly elevated round the corneal margin. Sometimes this elevation completely encircles the cornea, but it is generally more marked along the upper margin and sometimes limited to this part. In severe cases it extends to the cornea itself, but this extension is always limited to the margin. The bulbar conjunctiva either is not affected or shows signs of hyperæmia only. The conjunctiva of the lids is always hyperæmic, sometimes swollen, and its surface is covered with minute elevations over the whole of which a bluish-white film is usually noticed as if a thin layer of milk had been poured over the part. The cause of the disease is unknown. No special micro-organism has ever been found, though it is possible that such may yet be discovered. The subjective symptoms are those of hyperæmia. There is a feeling of discomfort with itching, photophobia, and heaviness of the lids. There is rarely any discharge, but epiphera is usually present

As regards therapeutics nothing seems to have much effect. Mild astringent antiseptics, coçaine, and cold applications, may be tried as the symptoms may seem to call for them. Strong astringents and caustics must not be used. Van Milligan strongly recommends a weak solution of dilute acetic acid. I have several times tried this without appreciable result. Arsenic internally has been recommended. If photophobia is marked, tinted glasses must be prescribed.

TUBERCULOSIS OF THE CONJUNCTIVA.

Tuberculosis of the Conjunctiva sometimes occurs in children or young people. There is often no sign of tubercular infection elsewhere: in such cases the disease is probably primary and due to direct infection; which may take place as the result of an abrasion or may follow the breaking down of a phlyctenule. In the majority of cases the tubercle bacillus can be found, but in some presenting a typical clinical picture it is not present. The course of the disease is usually chronic and the tubercles may serve as a focus for general infection.

In the earlier stages the conjunctiva is thickened, and yellowish nodules appear on its surface which generally break down into ragged ulcers surrounded by considerable indurations. Any part of the conjunctiva may be affected, and the ulcers vary much in size, sometimes the whole conjunctiva is infiltrated. The cornea is often involved and this complication makes the prognosis more serious. In bad cases complete symblepharon may result.

When the nodule or ulcer is small, complete extirpation or touching with the galvanic cautery is the most satisfactory treatment, but when the membrane is largely involved this is impossible. In such cases antiseptic lotions must be constantly used, boracic acid, perchloride of mercury, or formalin being the best remedies to choose from. Dusting with precipitated iodoform powder may also be tried. As a predisposition to tubercular infection is present, general treatment and directions must not be forgotten.

SYPHILITIC CONJUNCTIVITIS.

Primary syphilitic sores are sometimes found affecting the conjunctiva, generally near the margin of the lid, but occasionally appearing on the bulbar portion. When induration is well marked and the preauricular gland is swollen, the diagnosis is easily made, but sometimes these symptoms are absent. In all doubtful cases it is better to treat the case as syphilitic. The infection is usually communicated by the finger or by kissing. One of the worst cases that has been under my care, and which was followed by very severe secondary symptoms, was caused by the endeavour of a friend to lick a foreign body from the patient's eye, and I have since found out that this dangerous practice is common. Locally I have found black wash the best remedy.

PEMPHIGUS.

Pemphigus occasionally affects the conjunctiva, and when it does it is usually present in some other part of the body. The bullæ first appear on the fornix or bulbar conjunctiva; in time, however, they spread to the palpebral portion. After a time ulceration takes place, followed by shrinking of the whole membrane and adhesions between its surfaces. The cornea becomes opaque and finally participates in the general atrophy. The disease is very chronic in its course, and usually goes on to almost complete blindness. No treatment has any effect, and operative interference is useless.

ZEROPHTHALMIA.

Zerophthalmia is a rare affection, usually noticed in badly nourished children. It is characterised by dryness and dulness of the membrane. In slight cases the surface is covered by a white frothy-looking material, which can be easily wiped off. This consists of degenerated epithelium. In severe cases the cornea becomes dull and cloudy, and in time the mucous membrane shrinks and becomes absolutely dry, resembling skin. The disease is one of malnutrition, and the nervous system evidently participates in the mischief. Treatment consists in improving general nutrition and the application of lubricating materials to the eye, one of the best of which is paroline.

SURGICAL ABSTRACT.

THE SURGERY OF THE JOINTS AND BONES.

BY LEONARD GAMGEE, F.R.C S.

A Contribution to the Study of Hip Disease.—By V. Gibney, J. Waterman, and W. G. Reynolds.—(*Annals of Surgery*, October, 1898).

The authors enter into consideration of the results obtained in 150 cases of hip disease. They have traced the patients, all of whom had been discharged from hospital more than five years previously, and have taken notes as to the ultimate results of treatment in each instance. The general results can be seen by reference to the following table :—

Cured	107
Still under treatment	25
Advised re-admission for correction of deformity	7
Deaths	11
Total number of patients	150

In employing the word "cure" the authors state that they mean that the patients so designated are, to all appearance, free from disease ; that treatment has been suspended for a sufficient length of time, and that nothing remains as a sequel of the disease excepting deformity.

The routine treatment employed was that of extension by weight and pulley, and fixation in plaster of Paris or other retention-apparatus. Operative treatment consisted of forcible rectification, opening of abscesses, femoral osteotomy, and excision of the joint.

Taking into consideration first the cases returned as cured, it appears that the number showing no shortening at the termination of treatment was smaller than the number of cases showing no shortening at the commencement of treatment. On the other hand, the cases in which shortening was present at first evidently improved in this respect during treatment, as can be seen by reference to the following table :—

First Examination.		*Final Examination.*	
Shortening in inches.		Shortening in inches.	
0	35	0	21
Under 1 inch	28	Under 1 inch	26
1 to 2 inches	24	1 to 2 inches	46
2 to 3 „	13	2 to 3 „	9
3 to 4 „	5	3 to 4 „	4
More than 4 inches	2	More than 4 inches	1
Total	107	Total	107

The next table shows that, after treatment, the amount of movement at the joint was much greater than was the case when treatment was commenced:—

ANGLE OF GREATEST EXTENSION.

First Examination.		*Final Examination.*	
Less than 150 degrees -	57	Less than 150 degrees -	0
From 150 to 180 degrees	42	From 150 to 180 degrees	60
180 degrees - - -	8	180 degrees - - -	47
	107		107

The authors' general conclusions are as follow:—

1. During the acute stage rest in bed, associated with the use of the usual mechanical appliances, is preferable to ambulatory treatment.

2. In the first stage it is essential to procure absolute immobilisation and also to furnish protection to the joint.

3. In the second stage the deformity must be corrected, and operative procedures resorted to, if mechanical methods fail after a reasonable trial, usually extending over six months.

4. Early correction of the deformity is to be advised.

5. A position of adduction and flexion is the deformity which most frequently calls for correction.

6. Flexion without adduction rarely calls for correction.

7. Forcible correction, followed by fixation, should be tried before attempting reposition by femoral osteotomy.

8. When there is absolute ankylosis or movement, through only a few degrees, the acute condition having subsided, subtrochanteric osteotomy of the femur should be performed, supplementing this operation, when necessary, by tenotomy, myotomy, and fasciotomy.

9. The injection of chemical substances into abscesses and sinuses does not prove beneficial.

Coxa Vara. By M. B. Fabrikante. *Revue de Chirurgie*, July and November, 1898.

Etiology.—Four causes have been suggested :—

1. Rickets.
2. A form of osteomalacia occurring in adolescents. (Kocher).
3. The mechanical effect of a heavy body on a weak femoral neck.
4. Kredel believes that the condition is congenital.

Hofmeister reports that 32 out of 40 cases occurred in patients between the ages of 13 and 18 years. Fabrikante's 4 cases occurred in children of the ages of 3, 7, 8, and 8½ years respectively.

Pathological Anatomy.—The alterations occur in the neck of the femur only, the hip joint itself remaining free from change. The neck of the femur may be bent in any of the following directions :—

1. Downwards.
2. Downwards and forwards.
3. Downwards and backwards.
4. Downwards and backwards, with rotation of the neck on its longitudinal axis.

In all cases the femoral neck is elongated, in the same way as the internal condyle of the femur is elongated in the condition known as genu valgum. On account of this elongation, the great trochanter is necessarily displaced considerably outwards; while, as the result of the downward bending of the neck of the femur, the trochanter is displaced upwards and is situated above Nélaton's line. The distance from the top of the great trochanter to the external malleolus is the same as on the sound side, but the distance from the anterior superior iliac spine to the internal malleolus is lessened. As the pelvis is depressed on the affected side, a compensating lateral spinal curvature exists.

Symptoms.—

1. Pain in the region of the hip and shooting down to the knee. The amount of pain is variable, and is less when the patient rests.

2. The muscles of the limb soon tire.
3. Limping comes on in the later stages.
4. Limitation of flexion and abduction.
5. Position of the great trochanter, as above described.
6. Wasting of thigh muscles.
7. Absence of signs of inflammation.
8. With the patient lying flat on the back, a characteristic change in the direction of the affected femur is noticed, the upper end of the bone being displaced outwards. Hence the interval between the thighs increases in breadth, as the pubic symphisis is approached.
9. Passive movements are painless.
10. No pain is caused by percussion on the great trochanter.

Prognosis.—This is favourable, if treatment is commenced early; but is bad, if the condition is left untreated.

Treatment.—Kocher recommends excision of the hip in severe cases.

Hofmeister recommends sub-trochanteric osteotomy of the femur.

Kraske advocates osteotomy of the neck of the femur with removal of a wedge-shaped piece of bone. In the normal state, the capsule of the hip joint is attached along the anterior inter-trochanteric line; but in coxa vara, the neck being elongated, this operation, advocated by Kraske, can be done without the hip joint being opened.

Ogston recommends cuneiform osteotomy through the great trochanter.

The author (Fabrikante) advocates treatment by massage and by extension by weight and pulley. He gives details of four cases successfully treated in this way.

Hey's Internal Derangement of Knee-Joint. Shaffer, *Annals of Surgery*, October, 1898.—In cases of recurrent dislocation of the internal semilunar cartilage, Shaffer finds the following changes in the knee-joint :—

1. Elongation of the ligamentum patellae.
2. A very considerable lateral mobility of the joint. When this condition is present, the normal rotation of the tibia in flexion or extension of the knee is greatly increased.
3. Inability to completely extend the knee without pain.

The author advocates treatment by the wearing of an apparatus, which must—(*a*) Prevent all lateral movement of the knee and rotation of the tibia, so converting the joint into a simple hinge-joint ; and (*b*) allow such an amount only of extension of the joint as can be performed without pain. The apparatus as shown in drawings almost exactly resembles that commonly used in this country, with the exception that the outside steel is carried down the leg and fixed to the sole of the boot.

Shaffer advocates the wearing of this apparatus for a year or two, and says that at the end of that time the ligaments of the joint have become sufficiently strong to prevent a recurrence of the dislocation. He holds that when this treatment is adopted operation is seldom required.

Morton's Disease, or Metatarsalgia. Péraire and Malley : *Revue de Chirurgie,* Supplement, November, 1898.—Péraire and Malley, by means of radiography, have made out that, in this condition, there is a distinct subluxation of the heads of the metatarsal bones concerned, and that the bones are affected by sclerosing osteitis. They advocate resection of the painful heads of the metatarsal bones when ordinary local and general treatment are of no avail.

Jones and Tubby. *Annals of Surgery,* September, 1898.—Morton suggested that the pain in this affection was due to the digital branches of the plantar nerves being compressed between the heads of the metatarsal bones. Jones and Tubby differ from this opinion on the following grounds, among others :—

1. The plantar digital nerves, instead of passing between the heads of the metatarsal bones deeply, lie quite superficially.
2. In most cases of Morton's disease the foot is broadened, due to collapse of the anterior arch, the digital nerves being thus rendered less liable to compression.
3. A broad-soled boot gives hardly any relief in advanced cases.
4. Grasping the foot firmly round the heads of the metatarsal bones frequently relieves the pain.

The authors give the explanation that the pain is due to pressure of the head of the fourth metatarsal bone on the communicating branch between the digital branches of the external and internal plantar nerves. This branch connects the fourth digital branch of the internal plantar nerve with the branch of the external plantar supplying the adjacent sides of the fourth and fifth toes. The communicating branch passes beneath the head of the fourth metatarsal bone, and so is exposed to pressure. When the pain is situated over the head of one of the other metatarsal bones, Jones and Tubby suggest that, when the anterior transverse arch gives way and tight boots are worn, the under surface of the heads of the metatarsal bones are rubbed, so to speak, over the digital nerves, and possibly one head is pushed out of place where the pressure is greatest, the digital nerve being thus compressed between the bone and the sole of the boot.

The authors, for purposes of treatment, recognise three degrees of the affection :—

1. When the pain is slight and transient.
2. When the pain is constant.
3. When the pain is constant and extremely severe.

For the first degree the treatment is largely preventive, viz :—

a. To abstain from any action which produces the pain.

b. The sole of the boot and the heel must be ¼ in. deeper on the inner side. The boot should be thick-soled and have a tightly fitting instep.

c. The sole of the boot should be at least ¼ in. thicker just behind the heads of the metatarsal bones than elsewhere.

The second degree should be treated as follows:—

a. The boot should be as above described.

b. A leather anklet, laced up the front should be worn, so as to keep up pressure round the instep.

c. Baths of hot and cold water when the pain is severe.

d. In many cases, before commencing treatment, it is well to give the foot three weeks' absolute rest.

For the third degree the most efficient and satisfactory treatment is excision of the head of the affected metatarsal bone through a small dorsal incision.

REPORTS OF SOCIETIES.

British Medical Association.

Birmingham and Midland Counties Branch.

Thursday, January 12th, 1899; The President, Mr. Vincent Jackson, in the chair.

Dr. J. W. Russell read a paper on "The Movements in Chorea."

Dr. Walter Jordan read a Paper on "Cough as a Symptom of Disease in Childhood."

Infantile Uterus.—Mr. Lawson Tait showed the preparation from a lady upon whom he had operated the day before, aged thirty-five. It was a case of marked want of development of the uterus, infantile uterus, and she had suffered all her menstrual life. She had of course the fœtal curve of the uterus very well marked, and had undergone much treatment for the so-called anteversion, every fresh effort resulting in an increase of her sufferings. This culminated eighteen months ago in division of the canal and the insertion of a stem pessary. For four or five months her sufferings had been materially relieved, but since then they have recurred with increasing intensity, so that for nine or ten months her menstrual week has been one continuous agony accompanied by constant sickness and even delirium, whilst during the other three weeks of the cycle she was in constant and severe pain. As a last resort Mr. Tait recommended removal of the uterus and appendages, and this he carried out employing the vaginal route as he had done in such cases for some four or five years. As such cases are included amongst those in which there is most doubt about the propriety of surgical interference we get, as Mr. Tait has long ago pointed out, the largest proportion of cases in which the symptoms have continued atter removal of the appendages only. He therefore advises primary removal of the uterus rather than leaving it for the necessity of a second operation

Double Pyosalpinx.—Mr. Lawson Tait also showed the preparation of a case of double pyosalpinx and suppurating ovaries from a virginal lady aged 37, operated upon ten days before, whose early history was precisely that of the first case, one of infantile uterus. She had accordingly suffered many things of many physicians during a number of years. Her medical attendant diagnosed a pelvic tumour some three years ago, and the lady, against his advice, selected a specialist who was recommended because he would not remove anything, but would cure by conservative methods. An operation was performed by the vaginal route eighteen months ago, but what was done is not known beyond that ever since a profuse purulent discharge passed from the vagina. Matters went from bad to worse, till Mr. Tait was called to her residence a long way north of Birmingham. It had been recognised by the doctor that a tumour was steadily presenting itself above the brim of the pelvis, and this Mr. Tait recognised as cystic, hinting that it might be a pyosalpinx. This it proved to be, a tube distended with over a pint of stinking pus, and as a companion it had the other tube occupied by about half as much decomposing blood and pus. The ovaries were about as large as oranges before they were removed; the whole mass densely adhered over its area, and the operation constituted as difficult and dangerous a proceeding as Mr. Tait had ever encountered. The patient has made an excellent recovery, and as a supplement, as well as a complement each to the other, the lesson of the two cases is, that it would have been far more merciful to the second patient to have removed her uterus and its appendages some five or six years ago; that would have been better for her financially as well as surgically; and that it would have been more creditable alike to the art of surgery and to the personal reputation of all the persons concerned.

Nephrectomy for Malignant Kidney.—Mr. Jordan Lloyd showed a malignant kidney removed from a man 54 years of age, whose condition was serious from excessive hæmaturia. The patient had fallen down two years before, injuring himself below the left costal margin, but no kidney lesion was suspected at the time. Some six months later he began to suffer from paroxymal pain deep in the left abdomen. About four months since came the first attack of hæmaturia, which lasted a few days and disappeared, to return and disappear on two occasions subsequently. The urine contained blood clots, and was of deep brown red colour. The left kidney could be felt enlarged. Lumbar nephrectomy was performed nearly two weeks since. The pedicle was temporarily clamped with Doyen's forceps; the ureter, the renal arteries and veins were tied singly with fine silk ligatures; the clamps then removed. No blood was lost from the kidney vessels at all. There was entire absence of shock and after-pain. This Mr. Lloyd attributes in great measure to the absence of an encircling ligature about a pedicle containing sensitive and sympathetic nerve structures. The patient has made an easy recovery.

Tubal Pregnancy.—Mr. Smallwood Savage showed a specimen of hæmatosalpinx resulting from tubal pregnancy, removed from a woman aged 29. Her history was that she had had three children, the last one four years ago, that she had miscarried four months ago, having gone five months, before which she had been quite regular. Three months ago, in October last, she was regular, and seven weeks ago she went four days over her time, since when she has been losing on and off.

Her present illness began seven weeks ago, when she was suddenly taken with acute pain of a paroxysmal character in the right lower abdomen, together with vomiting, diarrhœa, increased temperature and pulse-rate. On examination no physical signs were present except marked rigidity of the abdomen. Two days afterwards irregular menstruation began, which lasted seven weeks, but no decidual membrane was passed. The patient's condition remained much the same until four and a half weeks later, when by the vagina the uterus was found to be enlarged and the left tube was felt to form a lump in its mesometrium, and not until a week later did the pain appear on the same side as the diseased tube.

Laparotomy was performed on January 4th, when an unruptured sacculated hæmatosalpinx was removed after ligature with a silk knot. The fimbriæ were less prominent than normal and in process of inversion. Microscopically chorionic villi were found in the contents of the tube. The patient up to the present time is progressing satisfactorily.

Radiograph of Pelvis showing position of hair-pin in vagina, shown by Mr. J. Hall-Edwards.—E. H., aged 7, was admitted into the General Hospital on November 4, 1898, complaining of pain in the pelvis upon sitting down. There was an obscure history of a foreign body having been placed in the bladder, vagina, or rectum. The child was radiographed through the pelvis, the resulting picture showing the presence of a large hair-pin over three inches in length. This was extracted from the vagina on the following day by Mr. W. F. Haslam. The radiograph is a splendid example of the value of the X rays for localising foreign bodies in this position, where a digital examination should not be made without good cause.

Myeloid Sarcoma of Fibula.—Mr. Haslam showed a specimen that he had removed from a girl aged 8. The swelling had been coming for six months, but there was no pain or interference with the function of the limb. The upper third of the bone was expanded, and was found to contain a large quantity of blood and a comparatively small amount of new growth. The upper two-thirds of the fibula was removed after the external popliteal nerve and its terminal branches had been dissected off the expanded portion.

REVIEWS.

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INFLAMMATION OF THE BLADDER AND URINARY FEVER.*

Mr. Moullin's work in regard to Urinary Fever is so well known to most surgeons that we welcome this small volume with much pleasure. His reason for writing the book he states to be—"That it is not always admitted everywhere as a matter of common knowledge and beyond dispute that inflammation of the bladder is always due to micro-organisms which, in the vast majority of instances, have invaded it from without, and that what is commonly called urinary fever is nothing but septic intoxication or septic infection occurring under special conditions." That the author proves his argument fully must be admitted by all who carefully read the book.

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*Inflammation of the Bladder and Urinary Fever. By G. Mansell Moullin, M.D. Oxon, F.R.C.S. Eng., Surgeon and Lecturer on Surgery at the London Hospital, etc. London: H. K. Lewis, 136, Gower Street, W.C.

The first part of the book is devoted to the consideration of a few points in the anatomy and physiology of the bladder. Absorption does not take place through the bladder wall except when the surface is inflamed, and then it depends on the extent to which the epithelial layers are injured. This is contrary to that of the urethra, in which absorption takes place readily whether the surface is inflamed or not. There is no internal sphincter in the normal bladder. Fluid that enters the urethra anterior to the constrictor urethræ escapes by the penis; that which enters posteriorly, when it has filled the prostatic urethra, regurgitates into the bladder. The immediate cause of inflammation of the bladder is always a local irritant. It may be a mechanical or a chemical irritant, or it may be a living microorganism. Cold, congestion of the mucous membrane, retention of urine, are of importance; they lower the vitality of the tissues and weaken their power of resistance, but they do not cause inflammation. The varieties of cystitis he describes according to their causes as simple, suppurative, and specific, giving up the misleading term "catarrhal cystitis," there being no mucous glands or mucus secreting cells in the bladder.

Simple cystitis without living organisms can only exist for a very short time; in a few hours, if the urine is centrifugalised, organisms can nearly always be found in the deposit and cultivated from it. He states that ammoniacal decomposition of the urine has not been proved to occur except as the result of the action of certain organisms, all of which are septic and pyogenic. In the vast majority of cases the organism is either the urobacillus liquefaciens septicus or the staphylococcus pyogenes. The power that the bacterium coli possesses of decomposing urea is doubtful.

The pathological changes which occur in the various forms of septic cystitis are well described by the author. In the condition known as bacteriuria, the organism in the majority of cases is the bacillus coli; but the bacillus prodigiosus has been found. He points out that the toxins produced by the bacteria while in the bladder are not absorbed so long as the epithelium continues to be healthy and uninjured. But if the toxins become concentrated, or the epithelial cells are kept in continued contact with noxious substances, their vitality is impaired and absorption takes place as rapidly from the bladder as from almost any other mucous surface. Melchior's catheter is advised as the only reliable one for estimating the organisms found in the urine in suppurative cystitis; all others are liable to give false results. The urine should be at once centrifugalised. In 30 cases examined by the author the bacterium coli was present in 25. The majority of these cases were men suffering from enlargement of the prostate.

From a clinical point of view perhaps the most important part of the book deals with the condition called urinary fever. This is very well done and worthy of careful consideration by all surgeons. The important point is emphasised that rigors rarely, if ever, occur after suprapubic cystotomy, but may frequently after the incision is made in the perinaeum; the explanation being found in the size and freedom of the opening and the consequent absence of urinary pressure. In all cases in which rigors occurred, and in which the urine was examined, septic organisms were found in the urine, and almost invariably the bacillus coli; sometimes alone; sometimes in association with others. In order to avoid urinary fever, the first essential is to clear out the intestinal canal thoroughly. To do this salol is advised in doses of two to three grains, six or eight in the twenty-four hours, and afterwards a calomel purge, followed by an effervescing draught. In cases of enlarged prostate, it is pointed out that residual urine may exist for many years and not give rise to cystitis until a catheter is passed and infection takes place, the organisms being always carried in by the catheter; either the catheter being septic or organisms have been carried in by it from the meatus urinarius. There are very seldom organisms in the urethra itself capable of setting up cystitis. In the treatment of septic cystitis, salol in small doses frequently repeated is advised, also benzonaphthol when the urine is alkaline from the presence in excess of a fixed alkali and should be given in cachets, in five to eight grain doses, three times a day.

Mr. Moullin agrees with the practice of most surgeons in advising suprapubic rather than perineal drainage, pointing out that although the latter acts very well when the patient is lying down, yet when he is up the former is far more comfortable.

The latter part of the book is devoted to tubercular cystitis, and several cases are quoted in which the ulcers were scraped and cauterised with very good results. In conclusion we can only express the hope that all surgeons will read this book and practice the methods advised by Mr. Moullin, then there is no doubt they will get better results in urinary surgery than they have been accustomed to formerly.

A MANUAL OF MODERN SURGERY, GENERAL AND OPERATIVE.*

In the preface to the first edition of this book, published in 1894, the author stated that "the work seeks to stand between the complete but cumbrous text-book and the incomplete but concentrated compend," and we conclude, from the fact that a new edition was required at the end of four years, that the author has fulfilled his purpose and that the book has supplied a want.

The opening chapter gives a short, but clearly written and interesting account of the subject of bacteriology, in so far as it applies to surgery. Then come sections on inflammation, surgical fevers, ulceration and gangrene. In the description of the treatment of dry gangrene, we are told on page 122 to "wait for a line of demarcation and amputate well above it," while on page 123 the following direction is given:--"When a line forms, dress with antiseptic fomentations and iodoform, and every day pick away dead bits with the scissors and forceps." We presume that the former statement is intended to apply to cases of gangrene due to embolism of the main artery of a limb, and the latter to cases of senile gangrene. But this should have been made more clear, especially if the book is to be used by students preparing for examinations. When senile gangrene shows a marked tendency to spread, the author advises amputation above the knee. The correctness of this advice has been proved time after time.

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* A Manual of Modern Surgery, General and Operative. By John Chalmers Dacosta, M.D. With 326 illustrations. Pp. 911. London; Henry Kimpton, 1898.

The chapter on the ligature of arteries particularly pleases us, for the descriptions are clear and practical, while the illustrations are exceptionally good. We are somewhat surprised to see that, while all the methods of treating aneurism are mentioned, no special stress is laid on the modern tendency to replace, when possible, the Hunterian operation by that of complete excision of the sac. This treatment for aneurism has been advocated in this country by Pearce Gould and others, but it is too early as yet to predict the future that is in store for it. The section on the subject of fractures and dislocations is full and accurate, and in it are contained discriptions and illustrations of many forms of splint seldom met with in England. The description of diseases and injuries of the head has been brought well up to date, and many doubtful points are fully discussed.

The author is most emphatic, and we think rightly so, in his denunciation of the treatment of microcephalus by the operation of craniectomy, and says that he follows the precept of Agnew, that a surgeon might as well cut a piece out of a turtle's back to make a turtle grow as to cut a piece out of the skull to make a brain grow. The term "cerebral concussion" is often loosely used in conversation and in lay literature without any distinction being made as to whether the patient is suffering really from concussion or from the more serious condition of cerebral laceration. Pure cerebral concussion is never fatal, cerebral laceration often is; hence the importance of properly distinguishing between the two conditions in a surgical text-book. This most necessary distinction Dr. Dacosta does not make at all clear; in fact, not sufficiently clear to give the average student a proper idea of the subject. In our opinion Dr. Dacosta is too drastic in his treatment of head injuries; for instance, he says that "in any severe contusion the surgeon should at once incise the scalp and inspect the bone." This, we venture to think, is not the usual treatment adopted either by English or American surgeons. Again, he advises that, in the case of a gunshot wound of the skull, the bullet if retained, should always be sought for. In no cases is it more difficult to decide upon the proper course of treatment than in those in question, and we are convinced that Dr. Dacosta's statement is, to say the least, far too dogmatic. The section on the Surgical Treatment of Epilepsy and of Cerebral Tumours is well written, full, and to the point, and repays careful study.

There are many good features about the chapters on the Surgery of the Abdomen. The subjects of intestinal anastomosis and the technique of abdominal operation are fully described, and the illustrations are good. But in this portion of the book, also, the author is not sufficiently cautious and is too dogmatic; for instance, in speaking of appendicitis, he says that "an interval case should be up and about in from ten days to two weeks after operation." We cannot conceive a surer way of causing a ventral hernia than by following this advice. The last few pages of the book contain a sufficiently full and concise description of the employment of the Röntgen Rays.

In pointing out what we consider faults in Dr. Dacosta's book, we are at the same time not blind to its merits. The style is clear and concise, the illustrations are excellent, and, taken as a whole, the treatment advised is sound. We cannot altogether recommend the book to the student, who has not had sufficient experience to enable him to reject what is bad and to assimilate what is good, but we can recommend it to the surgeon who desires a good *résumé* of modern surgery.

GOUT: ITS PATHOLOGY AND TREATMENT.*

THIS book is mainly composed of the Goulstonian Lectures on "The Chemistry and Pathology of Gout," delivered in 1897 before the Royal College of Physicians, together with various papers subsequently published in the medical journals. It now forms a complete monograph on the subject, whilst still retaining the prominently chemical character of its original items, and it well represents the views held by the most recent workers on the pathology of gout.

Dr. Luff upholds the opinion that uric acid is neither taken into the body by the mouth, nor formed by the tissues, liver, or spleen, but is a special product of the kidneys themselves. This of course is not claimed as an original proposition, for it has been urged of late by many writers, and indeed is only a reversion to the views of pathologists of an earlier period. But Dr. Luff has made much valuable investigation, the results of which strongly support this view; and of especial value is his demonstration of the complete absence of uric acid from the blood in health, by a new and satisfactory chemical method which he has worked out for himself. The same method shows beyond doubt the presence of uric acid in the blood in all cases of gout and renal disease. On the other hand, uric acid is certainly also present in the blood in other disorders, especially those in which leucocytosis occurs, though in these cases it is believed to be derived from the nuclein of the white corpuscles themselves. Nevertheless there is here no deposit of sodium biurate in the joints, whilst a greatly increased quantity of uric acid is found in the urine—in contradistinction to the diminution always to be noted in cases of gout. The deduction therefore is made that the fault in gout lies in the inability of the kidneys to excrete the uric acid they have manufactured, and Dr. Luff believes that this fault is due to the existence of a chronic interstitial nephritis practically in all cases. We should add, however, that he insists upon a preliminary "functional" inability on the part of the kidneys, whatever that may mean, which may even be the warning sign of the danger in which the patient stands.

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* Gout: Its Pathology and Treatment. By Arthnr P. Luff, M.D. Lond., B.Sc., F.R.C.P.; Physician in charge of Out-patients, and Lecturer on Forensic Medicine at St. Mary's Hospital. London. Paris, New York, and Melbourne: Cassell and Company Limited. 1898.

In support of these views the writer quotes statistics drawn from various *post mortem* examinations; but here the demonstration is not conclusive, and we feel that there is need for better evidence obtained from clinical research. Thus, amongst other points, real knowledge as to the presence or absence of a history of gouty trouble in the case of all patients whose bodies are examined *post mortem* is necessary before it can be said that these views are fully borne out in actual experience.

With regard to treatment by medicines, Dr. Luff believes in colchicum alone, and records many experiments to show that the usual administration of alkalies, as well as of other drugs, is entirely useless. Thus, a very large number of experiments are reported, which investigate the effect of the various alkalies, salicylates, piperazine, etc., on the behaviour of blood serum towards uric acid. These experiments show that diminution of the alkalinity of the serum by addition of an acid has no effect whatever in hastening the conversion of sodium quadriurate into biurate, and also that the latter becomes even somewhat more soluble in serum, the alkalinity of which has been so reduced. Moreover, the addition of alkalies, salicylates, piperazine, and lysidine, appears according to these experiments, to have no effect in any direction upon the reactions of serum towards either the quadriurate or the biurate. Many of these results, we note, accord entirely with those arrived at by Dr. John Fawcett, and reported in the Guy's Hospital Reports for 1895. They are certainly of much value, and, though we are not disposed to regard the experiments as absolutely conclusive, they should certainly suggest a careful clinical review of the treatment of gout. The action of colchicum is explained by Dr. Luff, on the ground that it is a powerful cholagogue, and might therefore be expected to interfere with the hepatic formation of glycocine, from whose combination with urea uric acid is thought to be produced. At all events, the quantity of uric acid excreted in the urine is considerably diminished when colchicum is administered.

Into other investigations, with regard to the effect of the ash of various vegetables on the solubility of uric acid, we cannot now enter. Like all the experiments of which we have been speaking, they are laboratory experiments only, and perhaps not entirely conclusive. Dr. Luff, however, is to be congratulated on having worked out with great patience and labour many interesting points, but, the final result of some of these must still, as we believe, depend ultimately upon revised clinical experience.

A TREATISE ON "UNRIPE" CATARACT.*

THIS excellent monograph by one who has devoted his serious attention to the subject for many years, will be warmly welcomed by ophthalmic surgeons. It is notorious that the Surgery of Cataract Extraction has been for some time non-progressive. It is almost the rule for patients with immature cataracts to be allowed to drag out a weary and woeful existence whilst waiting for the maturation of their cataracts. Methods hitherto employed for the artificial ripening of cataract have not found universal favour among ophthalmic surgeons, and a safe and efficient means of dealing with cortical matter must appeal forcibly to all surgeons who have the interest of their patients at heart.

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* A Treatise on "Unripe" Cataract. By William A. M'Keown, M.D., M.Ch., R.U.I., &c., Surgeon to the Ulster Eye, Ear, and Throat Hospital, Belfast; Lecturer on Ophthalmology and Otology, Queen's College, Belfast. London: H. K. Lewis.

In this volume the author deals exhaustively with the subject of cataract in general. The first chapter consists of a few general observations on the present position of the surgery of cataract. In the second chapter he makes a bold attempt to unravel and arrange the nomenclature used in the description of cataracts. His classification, though by no means perfect, will go a long way towards establishing a uniform terminology.

Chapter iii., on the Examination of the Patient and the resulting inference, is full of practical hints which will be invaluable to the junior surgeon and not without interest to the more experienced.

Chapter iv. is taken up with a discussion of the various methods of removing cortex and the probable behaviour of various cataracts under each method.

Chapter v. gives a detailed account of the preparations required for operation, including preparation of surgeon, patient, instruments, injection and irrigation apparatus, selection of room, light, antiseptics, etc.

In Chapter vi. the author gives a detailed description of his apparatus for intracapsular injection and intraocular and intracapsular irrigation; and in Chapter vii. he describes fully the method of using it in various operations. The subject is approached in a practical and scientific manner which carries conviction with it. Now that Dr. M'Keown has perfected his apparatus and brought the subject so forcibly before us, we have no doubt that this method will gain that position in ophthalmic surgery which it deserves. We are however unable to understand why he should have adopted the hand-pump for his injection and irrigation in preference to the even pressure of a head of water. We have found the latter very satisfactory, fully under the control of the operator and requiring no assistant. We must admit we should not care to trust any nurse, however experienced and trustworthy, to pump liquid into a patient's lens capsule.

Chapter viii. is occupied by a lucid description of post-operative incidents and treatment. Chapter ix. consists of a statement of cases which is interesting and instructive apart from showing the value and success of the injection and irrigation method. In Chapter x. the whole subject is summarised in a few short and clear statements. In the appendix the vexed question of Iridectomy in cataract operations is considered in a fair and exhaustive manner. Dr. M'Keown draws his conclusions from his own experience and from statistics of other surgeons. His decision in favour of Iridectomy is inevitable from both points of view when the interests of the patients are given the primary consideration.

The book is attractively got up, and the paper, print, and plates are good. There are a few typographical errors which will need attention in the next edition.

We can strongly recommend the book to all surgeons who want to do the best for their patients.

INFECTIVE DISEASES OF ANIMALS.*

This work is one of the most important on the subject in German, and the fact that it has been translated into other languages is a test of its value, and we welcome its appearance in English as an important contribution to comparative pathology. We hold strongly that sufficient attention has not been paid in this country to the natural history of diseases occurring in animals, and which are only familiar to many of us as affecting the human subject. There is no doubt that very valuable information could be acquired by the study of disease in animals and a considerable insight into their pathogenesis would no doubt be the result. Within the last few years there have been some remarkable instances in support of this, and we have only to mention tubercle and actinomycosis, diphtheria, and tetanus, to emphasise the importance of this question. When we consider also the extreme frequence of tuberculosis among certain animals, such as cattle, pigs and birds, it will be admitted that the bearing of the subject on human tubercle is one of the most important of the day, and considering the ease with which certain animals, notably the bovine species, contract the disease from infected cowsheds, licking one another, and in various other ways, the utmost precautions are required to prevent its occurrence, and effectual steps cannot possibly be taken without an intimate knowledge of the pathology of tubercle. This question is daily becoming more important, and it is to be hoped that one day the general public will wake up to a knowledge of the dangers of tubercular milk and meat. The use of tuberculin as a diagnostic agent in animals is carefully described. The author states that the dose for horned cattle is 0·5 grammes, and the reaction consists chiefly in a rise of temperature appearing in from 12 to 15 hours after the injection. If the increase of fever reach 1·5 degrees C. above the normal, there is a strong probablity of the presence of tubercle. On the other hand, supposing the temperature previous to an inoculation be abnormally high, there may be no indictation from the inoculation. But the writer points out, high temperature is not a marked symptom in excessively tubercular animals, and it is, therefore, in the slight cases that tubercle is most difficult of diagnosis, and it is in precisely such cases that tuberculin is most reliable.

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* Infective Diseases of Animals. Friedberger and Fröhner, translated by M. H Hayes, F.R.C.V.S. London : W. Thacker & Co.

It is rare for tuberculin to cause any injury to the inoculated animals. On the other hand, animals suffering from actinomycosis, caseous echynococci, distomatosis, and suppurative conditions may react in the same way to tuberculin.

There is a long chapter on the subject of rabies as it affects not only dogs but also bovine animals, horses, pigs, and birds, showing that the disease is a much more extensive one than is generally supposed. The anatomical changes are difficult to ascertain in many instances, and the writer quotes Axe as stating that the presence of foreign substances in the stomachs of dogs, together with considerable congestion of the mucous membrane, as constituting extremely important indications. The swollen hyperæmic spleen shows hæmorrhagic tumours, and the urine contains albumen and sugar. The changes in the brain and spinal medulla are very inconstant. In some cases there may be hyperæmia, œdema, and extremely minute hæmorrhages, while in other cases these may be absent.

Perhaps the most curious portion of the work is that relating to the occurrence of anæmia and chlorosis, leucæmia, pernicious anæmia and gout. Leucæmia seems to occur chiefly in cattle, horses, dogs, pigs, and cats. Its etiology so far in these animals is as obscure as in the human species. It is possible that a study of the comparative pathology of this disease may go far to elucidate much that is obscure.

In conclusion, we may state that this work is one well deserving careful perusal by those interested in morbid anatomy and pathology, and it cannot but conduce to a much larger view of these subjects.

MEDICAL DISEASES OF INFANCY AND CHILDHOOD.*

THE appearance of this contribution to the subject of Diseases of Children is to be welcomed, and Dr. Williams has supplied a long-felt want in that there is no handy volume which the student or junior practitioner can consult when in doubt. Most of the English works on Children's diseases being large and lengthy there is ample room for a book such as the present one, which, though it does not profess to be a text-book, will, we feel sure, be largely read. The descriptions of disease are graphic and clear though short, while in dealing with the subjects of Typhoid, Acute Rheumatism, and other diseases in which there is considerable variation from the adult type, the author is careful to demonstrate the ways in which the clinical course of the disease differs as observed in the child.

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* Medical Diseases of Infancy and Childhood. By Dawson Williams, M.D. London : Cassell and Co.

The author deals with general subjects, such as hygiene, sleep, and growth, in the opening chapters, and the importance of a careful study of these factors in the child's well-being is emphasised. But when we come to the chapters on feeding, foods and their preparation, we own to finding them somewhat lacking in detail. That this is the greatest difficulty in the whole subject of Diseases of Children there can be no doubt, and it is precisely on this point that the practitioner is most in want of help. Year by year we find probably that a larger number of children are hand-fed, and if we would be fully prepared for the many bad effects of artificial feeding we must be fully equipped, and although the principles as laid down in Dr. Williams' work are all that could be desired, we would have preferred some more detail.

Milk sterilisation is clearly described, and several useful and cheap forms of apparatus for this purpose are given in illustration. One point strikes us as meriting much praise, and that is that the author has refrained from long descriptions of some of the rarer, though none the less interesting, forms of disease, such as cretinism, while the usual and important forms, such as syphilis, tubercle, rickets, etc., are clearly described. On the other hand, the chapters on congenital heart disease and anæmia are too short. The latter is a subject of much importance, and on which we require more information; in fact, the whole department of diseases of the hæmic system might have been fuller, and we notice that no differential diagnosis between Hodgkins' disease and Lymphosarcoma is given. With the exceptions we have pointed out the book is, we repeat, one of much practical value, and we are glad to bring it to the notice of our readers as well worthy of careful reading.

DOUGLAS STANLEY.

ATLAS AND ABSTRACT OF THE DISEASES OF THE LARYNX.*

This work is No 3 of a series of medical atlases, published by the Rebman Publishing Co., and is an excellent translation by Mr. Max Gœpp from the original German.

There are a few notes at the commencement on the anatomy, physiology and methods of examination of the larynx, together with a short sketch of the pathology and treatment of the diseases of the larynx more commonly met with. The great part of the book consists of a series of coloured plates, showing the appearance of the larynx, as seen by the aid of the laryngoscopic mirror, in the various forms of diseases to which it is liable. Accompanying each plate is a short abstract of the disease and description of the figure represented, these are well arranged, for the most part the description is on the opposite page to the figure described, thus obviating the tediousness of having to turn over the pages to compare the figure with the text. The plates are well executed and were prepared by the painter Mr. Keilitz, from sketches or preparations by the author, and the paper on which they are printed brings out the colouring in a satisfactory manner. There are also twelve plates representing microscopical sections, showing the most important elementary changes which take place during the morbid processes in the larynx and adjacent parts.

This book will no doubt be of great service to the student of laryngology in aiding him in his diagnosis, and it is to the value of the clinical portion of the work we would particularly call attention, the plates being a very faithful representation of the pathological changes they illustrate.

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* Atlas and Abstract of the Diseases of the Larynx. Grünwald.

THE ORIGIN AND PROGRESS OF RENAL SURGERY.*

THE major portion of this book consists of the Hunterian lectures delivered by the author in 1898, to which is now added a lecture on injuries of the ureter and a series of tables descriptive of 267 renal operations performed by himself, and a table of 49 collected cases of calculous anuria.

The whole work is a concise, yet exhaustive, historical survey of renal surgery, from the 16th century, and forms a valuable contribution to what is, to a great extent, a modern branch of operative treatment.

In Lecture i. the various operations are detailed and a powerful plea advanced for the partial excision in place of nephrectomy. Operations on the ureter are very fully dealt with, and this portion is pregnant with instructive suggestions.

Lecture ii. is devoted to the consideration of renal calculus, and more especially to the difficulties and errors in diagnosis and forms a fitting preface to Lecture iii., which deals with, what is not only the most modern, but probably the most important section of the whole work, the consideration of calculous anuria and the imperative demand for early operative interference.

We are glad to note a marked protest raised against the method of needling for diagnostic purposes.

Injuries of the ureter receive full consideration in the fourth lecture, and abstracts from twelve cases are appended thereto.

The whole work is marked by that clearness of description and conciseness which characterise the writing of Mr. Henry Morris, and it will deservedly hold a high place amongst the medical classics.

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* The Origin and Progress of Renal Surgery, being the Hunterian Lectures for 1898. By Henry Morris, F.R.C.S. London: Cassell and Co.

A PRIMER OF PSYCHOLOGY AND MENTAL DISEASE.*

ALTHOUGH we do not believe that knowledge of the sort contained in this book is needed by the nurses and attendants of the insane, we recommend it for the use of medical students. It is of course only a very elementary treatise, containing just enough psychology to facilitate the study of more advanced books, and a mere outline of the principal forms of mental disease. Nevertheless, not a small proportion of students never arrive at even this amount of knowledge, and we think that the appearance of a small well-written book is likely to stimulate many to take a more lively interest in these very important matters. Dr. Burr's book fulfils the necessary conditions, for it is both small and well-written, and we hope that it will continue to meet with the success which has already called for the issue of a second edition.

A SYNOPSIS OF SURGERY.†

THIS small volume is formed from a collection of leaflets circulated amongst the students of St. Vincent's Hospital, Dublin. The author does not claim completeness for this work, but its value would have been greatly increased by addition of details of operative procedure.

Several of the less important sections are too elaborate for a work of this description, whilst others which deserve more consideration, notably those on Hæmorrhage and Ulcers, receive scant treatment.

In the chapter on Ulceration the insertion of specific ulcers would have rendered the comparisons more advantageous to students. The book is well printed and of convenient size, and with a little revision would prove a most useful surgical handbook.

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* A Primer of Psychology and Mental Disease, for use in Training Schools for Attendants and Nurses, and in Medical Classes. By C. B. Burr, M.D., Medical Director of Oak Grove Hospital for Nervous and Mental Diseases, Flint, Mich. Second Edition, thoroughly revised. Philadelphia, New York, Chicago : The F. A. Davis Company. 1898.

† A Synopsis of Surgery. By R. F. Tobin, F.R.C.S.I. London : J. and H. Churchill.

AN ATLAS OF BACTERIOLOGY.*

The object of this work is to provide the student with a small and handy working atlas of bacteriology. Although there are now many works dealing with the subject, the present one possesses certain advantages which are sure to render it extremely useful. There are in all nearly 120 figures of the most important forms of organisms, and each is accompanied by a short clear description. In all cases there is a representation of the growth as well as of microscopic delineation of its appearances. We are particularly struck by the clearness and accuracy of the plates which have been most carefully executed. We can strongly recommend the work to all students of bacteriology.

WRIGHT'S VISITING LISTS.†

We have to acknowledge the receipt of copies of Messrs. Wright's excellent Visiting Lists. These are too well known to need description. We may mention, however, that there are three forms in which they may be obtained, namely, one in which fixed dates are printed throughout; a second, in which the practitioner fills in his own dates (called the "Perpetual" form); and thirdly, a list provided for the use of certifying surgeons under the Factory and Workshops Act. They are admirably adapted for the use which they are intended to serve.

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* An Atlas of Bacteriology, by Charles Slater, M.A., M.B., and Edmund J. Spitta, L.R.C.P., M.R.C.S. London: The Scientific Press Ltd.

† Wright's Improved Physicians', Surgeons', and Consultants' Visiting Lists. Compiled by Robert Simpson, L.R.C.P., L.R.C.S. Sixth Edition. Bristol: John Wright and Co.

We have received copies of Letts' well-known "Medical Diary" for 1899. They are so well known to the profession that we have merely to say they in every way come up to their usual standard of usefulness.

VARIA.

The well-known "Archives de Physiologie," founded by Brown Séquard, have ceased to exist; but, we have much pleasure in stating that their place is taken by the "Journal de Physiologie et de Pathologie Générale," which will, we hope, amply supply the place of the "Archives." The new journal is edited by MM. Bouchard and Cheauveau. Only those who have used the "Archives de Physiologie" know of what value it was, and such will gladly welcome what is after all the older journal in a new form.

As with the "Archives de Physiologie," so with the "Archives Générales de Médecine." It comes out this year in a new, and we are bound to say a very greatly improved form. The paper and printing are better, and if we may judge from the first number, the articles seem a little brisker.

We have also to notice the appearance of a new periodical, namely, the "Archives Provinciales de Médecine," of which we have received the first number and the request to exchange the "Birmingham Medical Review." Juding by the articles and general style of the publication we have much reason to anticipate a happy career for it, and we wish it every success.

New Books, etc., Received.

From James Maclehose and Son, Glasgow—
Glasgow Hospital Reports. Vol. i.

From The Scientific Press—
George Harley, F.R.S., or the Life of a London Physician. By Mrs. Alec Tweedie.

From Henry Glaisher—
So-called Spasmodic Asthma. By Ernest Kingscote, M.B.

From The Rebman Publishing Company—
Diseases of the Stomach. By Van Valzah and Nisbet.
Complications and Sequels of Typhoid Fever. By W. W. Keen, M.D.
An American Text-Book of Gynæcology. By J. M. Baldy.
Medical Diagnosis. By Vierordt. Translated by Francis H. Stuart.
Diseases of Children. By American Teachers. Edited by Louis Starr, M.D.

From Young J. Pentland, Edinburgh—
Edinburgh Medical Journal. Vol. iv.

From Cassell and Co.—
The Year Book of Treatment. 1899.

From John Wright and Co., Bristol—
Golden Rules of Obstetric Practice.
Golden Rules of Surgical Practice.
Golden Rules of Gynæcological Practice.

We have also to acknowledge the following Reprints—
a. The Treatment of Deficient Excretion from the Kidneys; and *b.* Hereditary Syphilis. By Duncan Bulkley.
a. Injuries of the Eyelids and Eyeballs; *b.* Cataract Operations; *c.* Iritis. By L. Webster Fox, M.D.

⁂ Authors can have reprints of articles at the following rates:—

Not exceeding 8 pages	...	8/- per 100
„ 16 „	...	12/6 „

The re-arranging of the type is the principal cost in the production of these reprints, so that smaller numbers will be the same price. Larger numbers at a proportionate reduction.

The Subscription to the *Birmingham Medical Review* is 6s. per annum, post free.

NOTICE.—*All Communications, Exchanges, and Books for review, should be sent direct to the Printers and Publishers, Messrs. Hall and English, 71, High Street, Birmingham.*

THE

BIRMINGHAM MEDICAL REVIEW.

MARCH, 1899.

ORIGINAL COMMUNICATIONS.

EPILEPSY, OR FALLING SICKNESS.

BY C. W. SUCKLING, M.D. LOND., M.R.C.P.
CONSULTING PHYSICIAN TO THE QUEEN'S HOSPITAL, BIRMINGHAM, ETC.

THIS paper is based upon the cases of upwards of four hundred private patients who have consulted me during the past few years.

By the term epilepsy I mean a functional disease of the nervous system characterised by periodical convulsive attacks with loss of consciousness, or at any rate with mental disturbance. The degree or severity of the convulsive movements varies greatly; there may be merely twitching of one side of the face or of the lips; but in all cases of true epilepsy there is disturbance of consciousness, varying from mere incoherence in speech to complete insensibility. In thus defining epilepsy all cases of convulsion due to uræmia, lead-poisoning, alcoholism, tumours, or other organic affections of the brain are excluded. In true epilepsy the attacks occur at irregular intervals during a prolonged period of time, and are due to some disturbance in the cells of the cerebral cortex; the condition is called "idiopathic," or primary (not depending upon any other disease), as there is no discoverable lesion in the brain. It is said that in some cases of epilepsy there may be severe convulsion without loss of consciousness. I believe the existence of some amount of loss of consciousness is essential to the diagnosis of epilepsy.

Etiology.—I find that in the great majority of cases there is a distinct family history of neurosis, the parents or their relatives having suffered from some neurosis, such as asthma, insanity, alcoholism, Menière's disease, migraine, and also, but seldom, epilepsy itself. Epilepsy only in rare cases is directly inherited, but the neurotic diathesis is transmitted in most cases, the exciting cause being then only needed to produce the fit.

Sex.—It has been said that females are more frequently afflicted than males. I have not found this so. Among my cases there were a third more males than females, boys and girls being in about equal numbers.

Age.—Epilepsy may begin at any age; it is most frequent in early life because of the instability of the nervous system, and of the greater reflex activity at that period. It has been said that after sixty it affects men only; this is not true. Among my cases I have two women and three men who were affected after sixty, and one man began to have attacks at seventy-two. Idiopathic epilepsy may be caused by inherited syphilis, and also by acquired syphilis apart from that form called Jacksonian or partial epilepsy.

Among the most common immediate causes of epilepsy are:—

1. *Mental disturbance.*—Worry is especially potent from whatever cause; overwork in childhood and overwork for examinations is a common cause. Fright acts severely on the young, and on women especially. I remember the cases of two sisters who were badly frightened; one died within the week from acute delirious mania and the other became a confirmed epileptic. Grief from loss of a relative has been the cause in several of my cases; excitement, irregular habits, late hours, and too much society are causes. In children excitement is a common cause. I have often found fits caused by romping at night.

2. *Injuries to the head.*—In fifteen cases epilepsy followed

injuries to the head, but injuries to any part of the body may be the cause; in one case the fits followed the falling of a weight on the foot, and in two cases they followed blows on the abdomen.

3. *The specific fevers*, especially scarlet fever and typhoid fever, are causes, though rare ones. The epilepsy that occurs after scarlet fever is very severe and incurable. I recently saw a little boy suffering from scarlet fever. He was attacked fourteen days from the onset of the fever with motor aphasia, and later on in a few hours with paralysis of the right side of the face and of the right upper extremity, due to phlebitis and thrombosis of the cortical veins. It is probable that epilepsy after scarlet fever is due to some such organic lesion, and hence its incurability. Of course any organic lesion of the brain may give rise to epileptic attacks. Whenever a fit occurs for the first time a most cautious opinion should be given. I have seen several cases in children and in old people where a tumour of the brain has turned out to be the cause of apparently idiopathic epilepsy.

Menstruation, if irregular, may possibly be a cause; the attacks are more frequent at these times, as is also the case with migraine in women.

Masturbation is probably a cause of epilepsy, which is often followed by a mental condition almost amounting to idiocy.

Reflex irritation is a common cause in childhood and in young people. Some have laid stress upon errors of refraction or other ocular defects. I have never met with more than two or three cases in which ocular strain preceded the attacks; one was a boy who whenever he looked up to see his pigeons flying had an attack. I have not known any case to be cured by glasses. The same statement applies to migraine. In some way most people with headaches are sent to oculists. I have sent some myself when there was ocular defect; but in migraine I have only seen one or two relieved out of several thousands of cases.

Phimosis in boys should always be looked for when they suffer from fits. I have had several cases which have recovered after operation.

Worms should always be excluded in children as a cause, but its frequency is much exaggerated.

Dental irritation is also said to be a cause.

Indigestion and improper diet are common causes in children. Nuts are especially dangerous to children. The mother of one little boy told me that she had some walnut trees, and that the boy had fits every year when the nuts were ripe, and that they could always tell by the fits that he had been after the nuts. Any hard food or overfeeding may cause attacks. Meat is not injurious in moderation. Two patients had been vegetarians for two or three years without there being any diminution in the attacks.

Rachitis, as is well known, is commonly associated with eclampsia, and in later life these children frequently develop into epileptics.

In a large proportion of my cases of epilepsy there has been a history of eclampsia in childhood, hence the great importance of a thorough course of treatment then.

The presence of some other neurosis is an important element in the causation of epilepsy. This applies especially to migraine, hemicrania or periodical headache. At least fifty per cent. of my cases of epilepsy have suffered from migraine also. I do not mean headaches after the attacks, which are common, but typical migraine; and, moreover, these cases are far more amenable to treatment than is epilepsy without migraine. When the fits cease the migraine usually gets worse, but the two affections may exist together. In a very large number of epileptics the parents or their relatives suffer from migraine. In several cases, migraine, Menière's disease, and epilepsy have occurred in the same individual.

Alcoholism.—Apart from the severe convulsions which occur in advanced alcoholism, idiopathic epilepsy is in some cases caused by moderate drinking. In several cases where men have led a sedentary life, and have taken several glasses of beer a day, the fits have ceased when they have discontinued taking beer.

In only two cases was gout present, and in only three was there any history of phthisis in the family.

Exposure to Sunlight.—In three cases sunstroke was given as the exciting cause. Epileptic patients should avoid exposure to the sun or to any bright light.

Athletics was the cause in two cases. In one case the patient had gone through a course of lifting heavy weights, which was followed by epilepsy. In the other case running was the cause.

Heart Disease.—I have met with mitral stenosis in several cases, and in these the addition of digitalis to the bromide mixture was successful in checking the attacks.

From a study of my cases I conclude that in all cases there is a neurotic tendency inherited, and that there needs only an exciting cause, such as worry, grief, overwork, fright, excitement, reflex irritation, &c., to start the condition. The lesson is that members of such families should be brought up in a proper manner and lead quiet lives. The epileptic is, as a rule, not nervous in a popular sense, but occasionally an evidently nervous individual becomes epileptic.

Sexual excess or excitement is a cause. Among the young trivial reflex causes are sufficient to bring on the attacks.

Symptoms.—Premonitory symptoms of an epileptic attack may be remote, occurring days or hours before an attack, or immediate warning, called auræ epilepticæ, occur. Remote premonitory symptoms are rare and usually take the form of irritability and bad temper. An aura was present in only about one-fifth of my cases. In one case the mother of the patient could always diagnose the onset of a fit because she noticed that twenty-four hours before the attack the upper lip dropped. In the great majority of the cases the onset was so sudden that the patient was unaware of the fit. The presence of an aura is to be desired, for then the patient may lie down or get to a place of safety. In idiopathic epilepsy there may be a local aura, a spasm or a sensation; twitching of one side of the face is very frequent, but all such cases should be carefully watched, as signs of organic disease may be developed later on. A girl who consulted me at the Queen's Hospital had a local aura, but no other signs of organic brain disease. Two years later she came again, but was blind as the result of severe neuro-retinitis. The aura may commence in one hand or one finger, or in any part of either upper or lower extremity, and consciousness is not lost until it has reached the head. The aura may be bilateral or general. Visceral auræ are frequent, especially pneumo-gastric warnings, a peculiar sensation running upwards from the epigastrium; less frequently palpitation precedes an attack.

Cerebral auræ also occur, such as giddiness and fright; special sense auræ are also common. In several of my cases a peculiar smell in one or both nostrils preceded the attack. In a few a peculiar taste was noticed.

Visual auræ occur frequently. In some cases, blindness of one or both eyes precedes the attack. Most remarkable hallucinations of vision often precede the attack. One patient used to see a young man dive into a well and get drowned. He also saw a particular friend dead in his coffin. These hallucinations made him get out of bed, when he fell on the floor in a fit. Another patient had an aura which began in the left hand with tingling of the fingers and cramp; this ran up the arm, then down the left leg, then his sight went, then his hearing, and after this there was loss of consciousness. This patient was ultimately found dead lying on his face. Another patient saw beautiful pictures and landscapes, and also apparitions—a room with people in it. Objects may approach or recede just before an attack. In some cases, things that occurred years ago are brought back to memory. In rare cases active movement may precede the attack; the patient may run along the road and then fall in a fit. In some cases twitching may occur, with movements of the lower jaw. In others violent shocks may occur in the morning without loss of consciousness, although these shocks are usually followed by loss of consciousness. Of course, cramp and startings, or twitchings, are all indicative of a condition of great reflex excitability, and may end in a fit, or occur independently in those subject to fits. In one case the fits were always preceded by the sound of a bell ringing on the right side of the head; this patient had been struck on that side of the head with a stick some years before the fits came on. In rare cases there is a sudden inability to speak, or incoherence of speech, just before the attack.

Four varieties of epilepsy may be distinguished:—

1. *Epilepsia gravior*, or haut-mal, or grand mal. In this form the attacks are severe, the patient falling with marked convulsion and loss of consciousness, and the attack is often preceded by the peculiar epileptic cry.

2. *Epilepsia mitior*, or petit mal. In this form convulsion is limited, and often confined to the muscles of the face or eye, while there is only momentary loss of consciousness. The patient may continue to stand, or to continue in a conversation, but there is a slight confusion or incoherence which may or may not be noticed by friends. As illustrations of petit mal I may mention that in one case the lower jaw dropped suddenly, the patient continuing to walk, but for an instant being confused. In another case the head fell forward on to one side.

3. *Abortive, irregular*, or *masked epilepsy* may occur, in which sudden attacks of mania, accompanied with acts of violence, or in which the patient is destructive, may take the place of the fits.

4. *Procursive epilepsy.*—In this form the patient being in a purely automatic condition performs eccentric actions, sometimes running along the street, or even jumping through a window. One of my patients ran always to the lift, and on one occasion fell down and was severely injured. This running about may follow a severe epileptic fit, and may be taken as a sure symptom of epilepsy.

Partial epilepsy is the form in which the convulsion always starts from one part of the body, and is preceded by an aura starting from that part, and is often followed by paresis of that part, with or without loss of consciousness. A local sensory aura is as important as localised convulsive movements in indicating the portion of the cerebral cortex affected. This form is called Jacksonian epilepsy. The progress of the attack may often be checked by compression just above the extremity from which the aura starts. It must be remembered that in ordinary epilepsy the convulsion occasionally begins with a local spasm or aura; but all such cases, as I have said, must be looked upon with suspicion, and watched for signs of organic disease.

In a typical attack of grand mal four stages may be distinguished:—

1. The stage of tonic spasm with loss of consciousness and sudden falling. There may or may not be an aura. The patient often falls as if struck by lightning. I remember seeing a man suddenly fall from a ladder, and being severely convulsed on the ground. Such a case might be the occasion of an action for damages; a man might fall and have a fit, and the question might arise as to whether the fit was due to injury caused by the fall or not. The previous history of the case would clear up the diagnosis. There is in this stage pallor of the face, and dilatation of the pupils, with loss of reflex action to light. There is also conjugate deviation of the eyes, with rotation of the head and neck to the side most convulsed. The breathing is almost arrested, and soon the face becomes cyanosed; the heart beats violently though the pulse may be small. The body is distorted by the violent tonic contractions. This stage lasts about half a minute.

2. The second stage abruptly follows the first stage; the muscles of the tongue, face, pharynx, and those of the limbs and trunk are affected by violent clonic spasm. The tongue may be bitten, the teeth may be broken, and there may be incontinence of urine and fæces. In some cases the tongue is always bitten on one side. The patient now becomes much cyanosed the pupils contract, and there is profuse perspiration. This stage lasts about two minutes.

3. The third stage is characterised by a gradual cessation of the clonic spasms, and a gradual return of consciousness. Vomiting may now occur and is dangerous, as the patient may be choked by food getting into the larynx. There is usually considerable exhaustion if the fit has been a severe one.

4. The fourth or after stage is characterised by lassitude, stupor, mental confusion, or irritability. The patient may pass into a deep sleep, or may get up or run about, or may be very violent. Very often the patient fumbles about and may undress. In many cases a large quantity of pale urine is passed. The temperature is not raised by a single attack, but if they are repeated, as in the status epilepticus, the temperature may be raised several degrees. The pulse may be irregular, but the heart beats violently.

After a fit petechiæ may be observed, on the face especially, or on the temples; hæmorrhage may also occur under the conjunctiva. Dislocation of the lower jaw may be caused by the clonic spasms, or dislocation of the shoulder, and these dislocations are apt to recur in after fits. Paralysis of one side may occur, due to exhaustion of the motor centres. This is transient. In many cases there is paraplegia for a variable time, and the patient may be unable to walk for some days. In rare cases albumen and sugar are found in the urine, but only in small quantities, and their presence is transient. At the Workhouse Infirmary, where for nearly ten years I had charge of about 300 epileptics, the attendants would know how each epileptic would behave after an attack. Some would be dangerous, some would be destructive, some would vomit, etc.

Petit mal varies very much, and, when slight, considerable difficulty may be met with in diagnosis. The attacks are often called turns or faints. There is very brief loss of consciousness or incoherence of speech, or mental confusion, and these symptoms are diagnostic of epilepsy. The convulsive symptoms are very slight, There may be only a turning upwards or to one side of the eyeballs and a quivering of the eyelids. The patient may or may not fall.

Vertigo is a common symptom. Automatic actions, as is well-known, are common after these attacks. The patient will often go up to strangers and speak to them, or will micturate anywhere. Sometimes the patient strokes himself, or clutches at the air. One of my patients after a fit would pick up anything he could get and run away with it. This shows the danger of epileptics being accused wrongly of stealing.

Mental disturbance in epilepsy.—Acute mania may follow the fits, and the patient may be very violent and homicidal. Atrocious crimes without motives have often been due to epilepsy. Between the fits the mental condition may be gravely affected. Serious loss of memory may reveal itself, and there may be defective moral control. In obstinate and confirmed epilepsy, especially where minor attacks are very frequent and have continued for years, the mind is usually affected, there being great loss of memory and imbecility. Frequency of the attacks and long duration are the potent factors to cause mental failure. In confirmed epileptics it will be found that they are always a source of discomfort at home, always complaining and jealous. Such cases are usually hopeless. The different forms of epilepsy may all occur at different times in the same individual. The time of the attack varies. Cases in which attacks at night only occur are very common. This is of course because during sleep the cerebral controlling influence is greatly diminished. The attacks frequently occur in the early morning, either when the patient is asleep or on getting out of bed. In other cases no time can be fixed at which the attacks are likely to occur.

Diagnosis of Epilepsy.—In all cases the urine should be examined for albumen and sugar, the fundus oculi should be explored, and the heart should be examined. In all cases an enquiry as to syphilis should be made.

Malingering.—Here there is no loss of conjunctival reflex, and the pupils are normal. There are no signs of asphyxia, and the individual may be made to exhibit signs of consciousness by faradism, or by holding a bottle of ammonia to the nose.

There is no vomiting, no incontinence of urine or fæces, and no petechiæ.

Hysteria may precede or follow epileptic attacks. But in hysterical attacks there is no loss of consciousness, the pupils are normal, the tongue is not bitten, there are no signs of asphyxia, and these subjects often scream or talk during the attacks. There is also no incontinence of urine or fæces.

Syncope.—Attacks of syncope may closely resemble attacks of *petit mal*, but there is no loss of reflex action. The conjunctival and pupil reflexes are present. There is no complete coma. A heart lesion may be present. The pulse is very feeble, and the cardiac action feeble, whereas in epilepsy nearly always the heart beats violently. In syncope there is usually a rapid recovery, and there is no biting of the tongue.

Menière's disease.—This disease may be present together with epilepsy. The severe attacks of vertigo, which occur in this complaint, may be taken for epileptic attacks, but there is rarely loss of consciousness. I recently met with a well-marked case of Menière's disease in which the patient, a man, would fall suddenly without warning and without loss of consciousness, but while down, and for some hours after, was intensely giddy. He suffered from migraine also. There was not the slightest mental disturbance.

Lead poisoning.—Whenever fits occur an inquiry should be made as to the possibility of lead poisoning. There may be violent convulsions due to lead without there being any blue line on the gums. Some years ago I saw a young man who had very violent fits, with hæmorrhage under the conjunctiva and petechiæ on the face, and I found he was employed in the office of an enamel works. He had no blue line on the gums.

Uræmic attacks with convulsions may be easily diagnosed by examination of the urine, and of the heart and blood vessels. Alcoholic convulsive attacks may be also easily recognised by the patient's appearance.

When a patient falls down suddenly with momentary loss of consciousness, it has to be decided whether the case is one of epilepsy, syncope, or Menière's disease. In chronic degenerative diseases of the nervous system, such as general paralysis, a patient may drop down suddenly, but the coma usually lasts some hours. The subjects of aortic regurgitation may drop down suddenly and get up again quickly without loss of consciousness or convulsion.

Complications of epilepsy.—Various forms of mental disturbance may develop in connection with epilepsy. As a rule the mental troubles are of short duration, but in confirmed epileptics there is persistent mental failure. Attacks of acute mania are frequent. All epileptics are liable to a very fatal condition called the status epilepticus, in which the fits continue, the patient not recovering consciousness between them. The temperature may rise to 105° F. or more, and death results from collapse. I have seen many cases of pneumonia in epileptics, and have found that during the illness the fits cease.

Prognosis.—In children and young people the prognosis is good. In all cases where the fits occur at rare intervals it is good; also where migraine co-exists it is good, but not always. In cases where minor attacks have occurred daily for years, and especially if there is any mental disturbance, the prognosis is very bad. I have met with such cases, and have found nothing that will check the attacks. In cases where there has been any lesion of the brain, as in post-hemiplegic epilepsy, the prognosis is hopeless. It is said that there is little danger to life in epilepsy. I do not agree with this, for when I had charge of 300 confirmed epileptics I found the mortality very large, either from the status epilepticus, or from some accident, such as suffocation after vomiting, or from turning on to the face in a fit, or from falling into water or fire. Among my private cases I have known some to get drowned in their baths, or when swimming, and in two or three cases they have accidentally shot themselves when out shooting. In epilepsy under 20 years of age the prognosis is favourable, as it is also in boys with phimosis.

Treatment.—I believe that if every case was properly treated from the commencement that in the great majority of cases a cure would result. After the first fit the patient should be under medical superintendence for at least two years, and should take the bromides for that time, and should have the general treatment necessary. The difficulty is that the people have not the patience to continue the treatment.

Medicinal Treatment.—The bromides still hold the field as the most useful drugs. The prescription I usually give to an adult is the following:—

℞	Potassii Bromidi	g x
	Ammonii Bromidii	g x
	Tinct. Bellad.	♏ x
	Aq. Menth. Pip.	℥ j

Two tablespoonfuls to be taken on getting into bed, and one tablespoonful to be taken before rising in the morning.

This mixture may be increased or diminished as necessary. It is best to give the medicine in this way, for the patient does not feel the worry of taking it, as he would if he had to take it in the day time. The medicine should be continued for at least two years after the fits have ceased. The dose has to be increased or diminished till the minimum quantity necessary to control the attacks is found. I have many times found that the omission of a single dose has caused an attack. The larger dose is best given at night so that its effects wear off towards the morning, and the patient is not sleepy all day. I have known patients take this medicine for years without the slightest ill effect. If there is heart disease the belladonna should be replaced by digitalis. If the bromide mixture fails borax may be tried, or ergot. In very obstinate cases iodide of potassium should be tried. Bromide of strontium has not in my experience been so useful as the bromides of potassium and ammonium. Arsenic is of no use in epilepsy. I have found that the addition of this drug for acne will bring on the attacks, and that iron also does the same. I have met with two or three cases of epilepsy with a slow pulse (forty to fifty) and have found the attacks cease with the bromides combined with trinitrin.

Where the bromides have failed I have also found the zinc salts useless. In some cases the addition of a small dose of tincture of opium instead of the belladonna has done good. I have asked a friend of mine, Dr. Rutherford, of the City Asylum, Exeter, how he treats cases of status epilepticus, and he writes that he has only lost one case during the last few years, before that most of them died. He clears the bowels with a large enema, and then injects one-hundredth of a grain of hydrobromide of hyoscine. If the convulsions are not better one-fiftieth of a grain an hour later is injected. After that he is guided by the condition of the patient, but more than two injections are rarely needed. The hyoscine used is procured direct from Merck, of Darmstadt. Dr. Rutherford thinks that most of the failures are due to using the so-called tabloids, which he considers are quite untrustworthy.

The general treatment in epilepsy is of the greatest importance, and unless this is properly carried out medicinal treatment is useless.

In the attack the patient should not be interfered with, except that biting of the tongue should be prevented by a piece of india-rubber wrapped in a handkerchief, the head should be placed on one side, and care should be taken that the patient does not injure himself against articles of furniture, or turn over on his face, Epileptics should not be allowed to climb ladders, or to bathe, or even to get into a bath. On more than one occasion I have known death to occur in a bath. Especial care should be taken in cases of procursive epilepsy that the patient is kept on the ground floor. After an attack it is best to leave the patient alone and let him sleep. Care must be taken to empty the mouth with a spoon when an attack comes on at meal times.

A quiet life free from mental excitement is necessary, and cold sponging or the application of cold water to the head does good.

In all cases where there is a local aura it is important to abort the attack if possible by a ligature, or a handkerchief, or a piece of tape applied round the limb; and the attack may sometimes be aborted by forcibly opposing the contraction of the muscles that are first convulsed. I have occasionally met with patients who by a great effort of will power have been able to stop the onset of a fit. Daily outdoor exercise, short of fatigue, and a moderate amount of mental work are necessary. It is a mistake to keep epileptic children altogether away from school. I find that they are much better for a few hours instruction daily. At the same time their lessons must not be made a worry to them, and should be of moderate duration. Tea or coffee should be taken sparingly. Epileptic patients should be advised not to marry, except in rare instances where the fits have only occurred at intervals of years. A young lady under my treatment had had no fits for two years, and then they began again. I discovered the cause to be that she had just become engaged to be married. An epileptic should not be allowed to carry a gun. Dancing, swinging, and romping are bad. I have mentioned the case of a little boy who always has fits after eating walnuts. I saw recently a middle-aged man who occasionally had severe attacks of cramp in the legs and very painful extension of the great toe; he had to jump out of bed and rub the parts to get relief. I found that these attacks always followed his eating walnuts. Children who have had eclampsia in infancy, or who come of a neurotic family, should be brought up most carefully; they should be properly kept in order, and should be brought up for an occupation which is suitable to them, which shall be free as far as possible from worry or excitement. I cannot give an accurate estimate of the number of cases not cured, cured, relieved, or not relieved, for in a large majority of cases the patient desired only an opinion and a prescription, and I did not see him again. But I am surprised at the number of cases that I have found to be cured at the end of some years. One gentleman whom I saw ten years ago recently brought his wife to see me; he had taken medicine for three years, but for seven years he had had no attacks. His attacks always occurred on getting out of bed in the morning. After the fits had ceased he had occasionally what he called shocks in the morning.

NOTES ON SIMPLE POSTERIOR BASAL MENINGITIS IN CHILDREN.

BY G. W. POWELL, B.A., M B.
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THE forms of meningitis most often observed in children are tubercular and suppurative meningitis; the former usually occurring as part of a general tuberculosis, and the latter as the result of adjacent suppuration or pyæmia.

Another variety of this disease much more rarely seen, but still not uncommon in Children's Hospitals, is known as chronic infantile or simple posterior basic meningitis, from the fact that the disease attacks the posterior fossa of the skull.

This form, described by Gee and Barlow in the St. Bartholomew's Hospital Reports for 1878, has received but little attention, and the references to it in the text books are often so vague that I think it may not be useless to give a brief description of the disease, derived partly from notes of cases seen in the Children's Hospital, and partly from the record of cases already published.

Simple basal meningitis generally attacks infants under one year, but the disease is not limited to this age. Cases occur not unfrequently in the second year of life and even later.

The onset of the disease may be either gradual or sudden. In the former case extreme irritability is often the first symptom noticed. In two of my cases the cutaneous hyperæsthesia was so marked that every touch produced violent screaming and struggling. The disease not unfrequently is ushered in by an attack of convulsions. The convulsions may recur several times or one prolonged fit may be followed by coma and rigidity and other signs of meningitis.

The symptoms of the fully-developed disease are cervical opisthotonos, coma, rigidity, convulsions, and hydrocephalus. The head is retracted often to a right angle with the spine, and the back is arched, so that the occiput and the buttocks may approximate. Opisthotonos is an early and most striking and persisting symptom.

Rigidity is often a well-marked sign. It may be general, or the arms only or the legs may be affected. The legs are often rigidly extended and the arms are stiff and flexed, with the thumbs adducted and the fingers closed.

Convulsions may recur several times during the course of the disease. The child lies in a state of stupor, with widely dilated and sluggish pupils. Sometimes inequality of the pupils is noticed, which may vary from day to day.

Nystagmus is not uncommon, and slight transient strabismus is often present. Optic neuritis, which we might expect to find with frequency in a basic meningitis, is generally absent in this disease.

The respiration is irregular, frequent pauses occurring, followed by deep sighs, and at times Cheyne-Stokes' respiration is observed.

A curious symptom, which occurs also in other forms of meningitis and in tumours of the brain, is the frequent occurrence of chewing movements of the jaws. It is said to be of cerebellar origin, and it certainly occurs in cerebellar abscess and tumour. It is a very marked symptom in a case of tumour of the crus cerebri at present under my care

The temperature in the cases I have seen has generally been subnormal, frequently registering 97°, and but rarely rising to normal. Feverishness is said to be present at the outset of the disease. It was not present in one case seen by me almost from the commencement. A rise of temperature takes place just before death in this as in the case of tubercular meningitis. As a rule, when fever is present it may be accounted for by the presence of stomatitis or some other complication. In only one of Gee and Barlow's twenty-five cases is a rise of temperature recorded, and in this case stomatitis was present, which was the probable cause of the elevation of temperature. There is rarely any slowing or irregularity of the pulse, such as occurs in tubercular meningitis. This may be explained by the age of the patients and want of development of the brain and of vagus control in such young children.

Vomiting is frequent at the onset and also during the course of the disease. Constipation is not the rule. One of my cases had diarrhœa during the first two weeks of illness. In another case in which constipation had been present, several hard, movable masses could be felt in the distended abdomen, which led at first to a suspicion of tubercular mesenteric glands being present.

Retraction of the abdomen is not so frequent as in tubercular meningitis, and the characteristic doughy feel of the abdomen is not observed.

Amaurosis is generally a symptom. Vision may not be restored for weeks or months after the other symptoms, such as rigidity, coma, have disappeared.

In infants the anterior fontanelle may be widely open and bulging; the coronal and sagital sutures also remaining open for some distance. Globular enlargement of the head, such as takes place in chronic hydrocephalus, has been noticed in some cases.

In older children, where ossification of the fontanelles and sutures has been already completed, it is possible for the intracranial pressure to force these once more apart, as in a case mentioned by Henoch of a child of three years and two months, whose symptoms were at first pain in head and neck and head retraction, and inability to walk or stand. In the fourth month of the disease it was noticed that the head was enlarging, and on examination it was found that diastasis of the parietal bones had taken place. The appearances increased daily so that the child had to wear one of his father's hats instead of his own.

The mother had noticed that the sutures had been firmly closed during the second year of life. This case finally recovered completely; and the opening up of the sutures may have helped the favourable termination by relieving the intra-cranial pressure.

In rare cases chronic hydrocephalus results. The disease may last from a month to a year or more. Consciousness may return after one or two weeks or the coma may continue for several months, and finally end in death or recovery

Simple meningitis has to be distinguished from the tubercular form of the disease. In the early stages this is often extremely difficult, as in both cases there is inflammation of the membranes at the base of the brain. In tubercular meningitis in infants there is always present a general tuberculosis. There is the history of consumption in the family, the presence of tubercular disease in the joints, glands, or lungs, and the occurrence of prodromata. The temperature, though it follows no definite curve, is generally raised to 100–101°, and seldom is it normal or subnormal for a week or fortnight at a time. The abdomen is retracted and gives a doughy feel to the hand. Optic neuritis is frequent after the first week of the disease.

The presence of tubercle in the choroid, which may be seen by the ophthalmoscope, would be certain proof of the tubercular origin of the meningitis, and the diagnosis would also be confirmed if the tubercle bacilli were found in the fluid removed by lumbar puncture. The duration of tubercular meningitis is rarely more than three weeks. It runs its course on an average in twelve days. It is not very frequently met with in the first year of life.

In several respects simple meningitis contrasts with the above. It most frequently attacks healthy children under one year of age. There is no history or evidence of tubercular disease. The temperature is generally normal or below the normal. The abdomen is often distended, and is not doughy. Optic neuritis is extremely rare.

Lumbar puncture is not likely to prove of much assistance in posterior meningitis, owing to the adhesions formed at the fourth ventricle or upper cervical region, but bacteriological evidence of the disease may be obtained from the fluid removed from the ventricles, in which the diplococcus described by Dr. Still may be found.

If basal meningitis in a non-syphilitic infant has lasted three weeks, it is probably of simple and not of tubercular origin.

From suppurative meningitis, the result of bone disease or pyæmia, the diagnosis is not so difficult.

The obvious cause is the presence of otorrhœa or empyæma. The sudden violent onset, with earache and then convulsions, and temperature of 104°, make the diagnosis of this disease fairly certain, while the rapid course, terminating in a few hours or days, is quite unlike the simple form of meningeal inflammation.

The prognosis in simple meningitis, although extremely grave, is distinctly more favourable than in the other varieties I have mentioned. The mortality seems to vary in the different miniature epidemics that occur. In Dr. Gee and Barlow's 25 cases 14 died, 3 recovered, and 11 were lost sight of. In most of these, however, the disease was clearly chronic, and it is probable that some recoveries took place. Of Dr. Carr's 11 cases (*Medico-chir. Transactions*, Vol. lxxx.) all terminated fatally. This, I think, is an unusual experience.

During the last two years I have seen recoveries from three cases of chronic meningitis. All three children were over two years of age, and in each case the temperature was subnormal throughout their stay in hospital. Recovery, however, is not always complete. In one case, in which a purpuric rash was present, absolute deafness followed from implication of the labyrinth (the facial nerves were not involved), so that deaf mutism resulted, and the child had to be sent to the asylum for such cases.

The lesion found in these cases is invariably an inflammation of the pia arachnoid at the base of the brain, sometimes extending down a variable distance into the cord. Lymph is found glueing together the cerebellum and medulla, and forming adhesions which cause obstruction to the passage of cerebro-spinal fluid from the ventricles into the sub-arachnoid space. Hydrocephalus is always present. The fluid sometimes contains green flakes of pus, but for the most part it is cerebro-spinal fluid and not inflammatory or dropsical effusion. Greenish lymph is sometimes found surrounding the auditory nerve, and usually isolated patches of lymph can be seen on the tip of each tempero-sphenoidal lobe.

No lesion is found in the other viscera in this disease, especially no evidence of tubercle. Catarrh of the middle ear has been found in some cases, in others not. Disease of the petrous bone is never present. It may be mentioned that muco-purulent secretion is constantly found in the tympanic cavities of infants who have died of any prolonged illness.

The ætiology is still a matter of some doubt. Meningitis has occurred in syphilitic infants, but in the great majority of cases no history or sign of syphilis can be discovered. Henoch says he has never been able to observe chronic meningitis in infantile syphilis, and although it may occur, it is still very doubtful whether one is justified in attributing it to syphilis.

Dr. Barlow insists on catarrh as a cause, and thinks that otitis media plays some part in the disease. Virulent microbes in the mouth might spread up the short eustachian tubes of infants and find a ready nidus in the inflammatory exudation there, and then be easily transmitted to the meninges.

Recently the researches of Dr. Still (*Brit. Med. Journal*, Oct. 15, 1898) point almost conclusively to the bacterial origin of the disease. He has found a diplococcus in the exudation at the base of the brain and in the lateral ventricles, which he believes to be the cause of the disease.

This micro-organism often closely resembles the gonococcus, but differs widely from the pneumococcus. It may be regarded as a variation of the diplococcus intracellularis of cerebro-spinal fever, and the modification of characteristics may account in some degree for the clinical differences between simple and epidemic cerebro-spinal meningitis.

In the treatment of meningitis in this country, venesection, leeching, and cupping, have for the most part gone out of fashion. Henoch, however, who is an authority in these matters, warns us urgently against the lack of energy which is now so prevalent in the profession, and which induces the practitioner rather to stand with his hands in his pockets than to apply leeches. For older children he puts on six to ten leeches or a similar number of wet cups on the neck, or perhaps also on the back, and he records some recoveries under this method of treatment.

The cases of recovery from basal meningitis which I have seen, and they are six in number, were all treated with either inunction of mercury or small doses of iodide of potassium. The inunction should be tried in the early stages of the complaint, and the treatment by iodides should be adopted when the acute stage is over. But though mercury and iodides may be useful nature and nursing far exceed them in value. (Money).

The great object is to keep the child alive during the prolonged period of coma, when wasting proceeds rapidly and death from sheer inanition is threatening. For this purpose it is necessary to have recourse early to forced feeding. A soft catheter can easily be passed through the nose to the gullet, and milk, eggs, and malted foods can be introduced at frequent intervals. In a certain number of cases presenting the symptoms of this disease, incision of the membrana tympani has been followed by recovery, and this should be practised if the case is seen in the early stages.

Tapping the ventricles or the posterior arachnoid cistern had been performed in a few cases, but generally with only temporary benefit. In one case the patient died of hæmorrhage from the trephine opening an abnormal sinus, which was an accessory sinus situated lower down than the normal one.

The occipital bone may be trephined near the foramen magnum, but great difficulty may be experienced in the operation owing to the extreme retraction of the head.

When considerable hydrocephalus is present it is found impossible to limit the escape of fluid after operation. The skull in such cases rapidly collapses, convulsions set in, and death results.

Operative measures, if undertaken early, may hold out some prospect of success. On the other hand, recovery may take place without surgical interference in apparently desperate cases, as in the following remarkable example:—

G. C., age 2 years and 9 months, admitted June 16, 1897, under Dr. Clarke, had been a strong, healthy boy till six months before admission, when he had an attack of peneumonia. Four days before admission he was seized with convulsions, which lasted four hours. Since then he had been unconscious. Vomiting, constipation, and extreme irritability had been noticed for some days previous to the fit. On admission the child was unconscious. The head retracted, the legs flexed and rigid. The eyes were widely open, and with a vacant stare; pupils dilated, and slightly unequal, but react to light. Slight internal strabismus; no optic neuritis. Respiration was at times sighing in character; the abdomen retracted; he passed urine and fæces under him involuntarily. Temperature 98°. He was ordered mercurial inunction. During the first three weeks in hospital he had frequent convulsions. When these ceased intelligence returned slowly. On July 16 amaurosis was still present; on August 1st vision had returned; by September 17 patient was quite sensible, rigidity had passed off, and he had gained flesh considerably. He was discharged cured on January 14th.

In this case there was a slight tubercular history. One child died of consumption and one of meningitis. It is possible, then, that this may be an instance of recovery from tubercular meningitis, but it seems much more probable that it was a case of simple posterior meningitis.

REPORTS OF CASES.

CASES OF EXCISION OF THE TONGUE BY KOCHER'S METHOD.

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THE three cases, of which I append details, are instances of advanced epithelioma of the tongue, treated by complete removal of the organ and extirpation of the lymphatic glands after the method devised by Professor Kocher.

Case 1.—E. G., male, aged 48. On admission into the General Hospital the patient had an epitheliomatous ulcer on the right side of the tongue, extending from a point half an inch anterior to the pillar of the fauces to within an inch of the tip of the tongue. The growth had deeply invaded the substance of the tongue, and had spread into the floor of the mouth on the right side, causing fixation of the organ. Immediately below the angle of the jaw an indurated but movable gland, the size of a hazel nut, could be felt. The growth was of four months' duration. The patient was a spare man, in very fair physical condition. Three days before operation several carious teeth were extracted, and until the operation the remaining teeth were frequently brushed and the mouth washed out with 1 in 80 carbolic lotion.

Operation, May 13, 1896. Tracheotomy was first performed, and a Hahn's sponge-covered tracheotomy-tube inserted, the pharynx then being plugged with iodoform gauze. An incision was made from the tip of the mastoid process down the anterior edge of the sterno-mastoid muscle as far as the level of the hyoid bone; then the knife was carried across to the great cornu of the hyoid bone, and thence upwards to the symphisis of the lower jaw. The skin and subcutaneous tissues contained in the flap so formed were dissected upwards and fastened to the cheek by two points of suture. The submaxillary and sublingual salivary and lymphatic glands were removed, and the lingual and facial arteries tied and divided. Then the edge of the sterno-mastoid muscle was retracted and the lymphatic glands beneath its upper portion removed. The floor of the mouth was next cut through and the tongue pulled out beneath the jaw and cut off close to the hyoid bone, after the mucous membrane of the mouth had been freely divided. An ordinary tracheotomy-tube was now substituted for the Hahn's tube, and the pharynx was replugged with iodoform gauze. The external wound was left perfectly open, no sutures at all being put in.

For the first 24 hours the patient was fed by nutrient enemata, and then through a nasal tube, the packing in the pharynx being taken out for the latter purpose and then replaced. The operation caused comparatively little shock. The temperature on the first evening was 102°, but afterwards never rose above 100°. On May 27th, as the wound was quite sweet and covered with healthy granulations, the tracheotomy-tube was left out. The patient was discharged, with the wound healed, on June 16th.

The diagnosis of epithelioma was confirmed by microscopic examination.

The patient came to the hospital for inspection on October 24th, 1898, two years and five months after operation. He was at that date in good health, and had never had a recurrence. His speech could easily be understood.

Case 2.—W. S., male, aged 46. At the end of July, 1896, patient noticed that a rough tooth had irritated and caused a sore place on the right side of his tongue. The sore had never healed, but had kept on enlarging till he was admitted into the General Hospital. On admission he was found to have a deeply excavated epitheliomatous ulcer on the under surface and edge of the right side of the tongue. The growth, which occupied the anterior and middle thirds of the organ, had spread deeply into the muscular substance and had invaded the floor of the mouth, the tongue being bound down. The submaxillary lymphatic glands were indurated and enlarged, the largest being about the size of a walnut. The glands were movable. The man was in poor physical condition.

Operation, Sept. 3rd, 1896. The details of the preparatory treatment and of the operation were exactly the same as in Case 1. The after-treatment was also carried out on the same lines. The temperature never exceeded 101°. The tracheotomy tube was left out on Sept. 20th. The patient was discharged, with the wound healed, on Oct. 23rd.

For five months the patient remained free from recurrence, but at the end of that time the lymphatic glands under the middle and lower parts of the right sterno-mastoid began to enlarge, and he died in a short time afterwards. The mouth remained free from recurrence.

Case 3.—T. P., male, aged 55. When admitted into the Hospital the patient had an epithelioma of the under surface of the left side of the tongue, extending from just in front of the anterior pillar of the fauces to within an inch of the tip. The floor of the mouth was extensively involved, the infiltration extending across the middle line. An enlarged gland the size of a hazel-nut could be felt in the left sub-maxillary region. The patient had noticed the growth for three or four weeks only.

Operation, Sept. 3rd, 1897. The preparation of the patient and the details of the operation were the same as in the two other cases with the exception that the rings of the trachea being very brittle an ordinary tracheotomy tube was used instead of the Hahn's tube. Three months after the operation the glands on the right side of the neck began to enlarge, and as the patient's condition was bad, it was deemed inadvisable to remove them.

Remarks.—Of the various operations for removal of the tongue by an opening through the floor of the mouth, Kocher's operation is at the present time the most extensively practised. Its chief advantages are:—

1. It gives good access.

2. It permits of simultaneous removal of the glands, and of the tissue between them and the growth. Regnoli's operation allows of this to a certain extent, too; but Kocher's method has this great advantage, that the glands beneath the upper portion of the sterno-mastoid muscle are removed as well as the submaxillary lymphatic glands.

3. It permits of preliminary ligature of the lingual or even of the external carotid artery.

The cases calling for the operation are those in which the growth has invaded the deeper part of the tongue substance and also the floor of the mouth. Such a drastic operation is not necessary when the growth on the tongue is superficial, in which case the organ can be removed by Whitehead's operation; but, even then, as Mr. Butlin has shown, the lymphatic glands should be removed either at the time of or shortly after operation. Mr. Butlin has proved, from the record, of his own cases, that, after excision of the tongue for carcinoma, the recurrence usually takes place in the lymphatic glands, and it may be safely prophesied that, before many years are past, the removal of the lymphatic glands will be considered to form as essential a part of the operation of excision of the tongue for carcinoma as it does of that of excision of the breast. If the lymphatic glands be enlarged, but movable, a thorough operation like Kocher's is all the more strongly called for.

Preparation of the mouth.—Three or four days before operation all carious teeth should be extracted, and from that time till the operation the tooth brush should be frequently used and the mouth washed out with an antiseptic lotion.

The Operation.—A preliminary tracheotomy should certainly be performed, and this for three main reasons:—1. The pharynx can be plugged with gauze, the entrance of blood into the trachea being thus prevented. 2. The anæsthetic can be given through the tracheotomy tube, and the field of operation left clear. 3. After the operation the tube can be left in till the wound is quite sweet, the risk of septic pneumonia being thus greatly lessened.

The actual details of the operation need not be repeated, as they were dealt with in the description of Case 1. There is one point, however, upon which stress may be laid, viz., the desirability of leaving the external wound without sutures. This ensures absolutely free drainage from the mouth, without which the risk of septic pneumonia is very great. It certainly delays the healing of the wound for a time, and also causes a rather thicker scar, but the scar is subsequently hardly visible, for it is drawn up close beneath the jaw.

In another case, resembling Case 3, in which the induration of the floor of the mouth had extended across the middle line, it would be advisable, as soon as possible after the main operation, to remove the glands from the submaxillary region and from beneath the upper part of the sterno-mastoid on the opposite side of the neck. If this had been done in Case 3 it is probable that a much longer period of freedom from recurrence would have been procured.

After-treatment.—The usual precautions of keeping the patient raised up in bed, feeding by the nasal tube, etc., should be observed. It is, I think, advisable to leave the tracheotomy tube in until the wound is granulating healthily, thus enabling the patient to breathe pure air instead of air drawn over the surface of what must always be a more or less offensive wound.

Results.—Taking the various methods of excision of the tongue together, the mortality of the operation varies from 14 to 20 per cent. Undoubtedly the method of excision of the tongue through the mouth by means of the scissors (Whitehead's operation) is attended by the smallest mortality; but it should be remembered that this operation is done for the less serious cases. Kocher's method has a slightly heavier mortality, though Kocher himself lost only 2 out of 18 consecutive cases. It has been computed (Treves's System of Surgery) that, after excision of the tongue for carcinoma, recurrence occurs within twelve months in 90 per cent. of the cases. The first of the patients, whose cases are related above., remained free from recurrence two years and six months after operation; and though I have not seen the man during the last four months, I understand that he still remains perfectly well. However, it must be borne in mind that instances have been recorded in which recurrence has taken place as long as seven or eight years after operation.

CASE OF ACUTE ALCOHOLIC POISONING IN A CHILD AGED FOUR YEARS.—DEATH.

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THE following case was admitted into the Queen's Hospital, under Dr. Foxwell, by whose permission it is published.

Patient, C. W., aged four, brought into hospital unconscious, at 10 30 a.m, was said to have drunk, one hour previously, about five ounces of neat brandy. In the absence of the mother from the bed-room he climbed out of his cot, took the bottle from the chest of drawers and was found a few minutes later standing with the bottle in his hands, and apparently quite sensible. Almost immediately he lost consciousness. A mustard and water emetic was administered, but vomiting did not take place.

On arrival at the hospital patient was unconscious and could not be roused; face flushed, pupils contracted, and conjunctival reflex absent. Before the stomach-tube could be passed he vomited about two ounces of what seemed to be pure brandy. The stomach-washings smelt strongly of the same spirit. Pulse regular, slow, full, and of moderate tension; temperature 94°.

He was put to bed with hot blankets and bottles. Calomel gr iv. given by mouth; a castor-oil enema was followed by half-pint enemata of strong coffee every half-hour, and the stomach was washed out at the same interval. During the next three hours little change was noticed except a steadily-rising temperature and the vomiting of a little dark-red fluid which gave the guaiacum reaction. Five hours after admission the temperature had risen from 94° to 97·6°, and an hour and a half later, the first signs of cerebral irritability, were shown by two attempts at convulsions.

The following are the notes of progress of the case:—

6 p.m. Cheyne-Stokes breathing has set in definitely (continued more or less typically until death). Pulse remains slow and full and rather softer than before. Corneal reflex still absent. Two definite convulsions then occurred producing opisthotonus and extension of arms.

8 p.m. Temperature still rising, being now 98 8°.

9 p.m. Some continued rigidity noted in right arm; right eyeball twitching. K.J. not exaggerated.

10.30 p.m. Coarse twitching of right side, principally affecting the arm. Respiration quick and regular. Pulse 82. Temperature 101·2°. Rigidity of right arm has disappeared. He vomited at intervals through the night, but there was no evidence of enteritis. Temperature at 12 midnight, 103°; 1 a.m. 105°, coming down to 101 8° after sponging. Ice-bag was applied to top and sides of head, and chloroform controlled the convulsions, but the inhalation was not continued owing to their mild character.

7 a.m. Heart failing; much secretion in tubes. Pulse can scarcely be counted, about 150. Liq. strychnine ♏ ii. every two hours.

11 a.m. Abdomen rather distended and tense; no urine in the bladder. Temperature 100·8°.

12 a.m. Breathing irregular, stertorous, 54.

3 p m. Child has just died, having two severe general convulsions immediately before death. Has been pulseless since noon.

Post mortem.—***Brain.***—Dura rather tense; convolutions are a little flattened; 3 lbs. 6 oz. Considerable amount of blood-stained fluid in sinuses; slight tendency to clot in lateral sinuses. Pia injected; fair amount of blood clot in basilar artery. Pons healthy. Floor of ventricle iv. shows no lesion. Transverse section of medulla healthy. No lesion detected in spinal cord.

Abdomen.—Large number of enlarged mesenteric glands.

Spleen moderately enlarged, dark, flabby. Malpighian bodies very distinct.

Stomach very contracted. Mucous membrane *healthy.*

Duodenum healthy. Wall of intestine is very thin and shows solitary follicles very distinctly.

Ileum is greenish coloured, shows opaque patches in lower part.

Liver pale; lobules, chocolate colour; on section smooth, lobules distinct; no gross change, but microscopically, intense and acute fatty degeneration is seen in the hepatic cells.

Kidneys.—Cortex healthy. Capsules not free, leaving when peeled a granular surface. Microscopically much cloudy swelling and commencing epithelial disintegration. Urine contained a cloud of albumen.

Thorax.—Both *lungs* show extreme congestion at their bases. Not much œdema.

Heart.—Right auricle contains much loose clot. Nothing else of note.

REPORTS OF SOCIETIES.

British Medical Association.

Birmingham and Midland Counties Branch.

Thursday, February 9th, 1899. Mr. Langley Browne in the Chair.

Mr. Lawson Tait read a paper on "The term 'Conservative Surgery' as it has been proposed to apply it to the Uterus and its Appendages."

Dr. F. M. Rowland read a paper on "The Pathology and Treatment of Angina Pectoris."

Nodular Myoma of Uterus.—Mr. Lawson Tait showed a specimen in which he removed the whole uterus on account of multi-nodular myoma, the chief trouble of which arose from its filling the pelvis and pressing on the bladder, the whole mass being firmly fixed. At the operation the broad ligament was found to run straight from the brim of the pelvis on to the tumour, so that delivery of the tumour was not possible until the broad ligament was opened up, according to Penn's plan. This had recently been resuscitated as "Pan-hysterectomy," an entirely indefinite name. Although much lauded for a few months and on a very short trial, its mortality is now found to be as high as in Penn's own time, and it is not likely to find permanent favour.

In this case the patient made a splendid struggle for recovery, but died on the ninth day.

Ulerythema Sycosiforme.—Dr. Leslie Phillips showed a case of Ulerythema Sycosiforme. The man had had the disease for thirty years and presented the last stage of the disorder, viz., that of bald scar tissue. In view of the non-success of ordinary treatment the exhibitor expressed the view that it might be worth while to freely use the cautery to the spreading border of more recent cases.

Perforated Gastric Ulcer. Operation; Recovery.—Mr. Barling showed for himself and Dr. Carter a girl aged 18, domestic servant, who on November 24th was seized with sharp pain in the epigastrium about 8 a.m. after taking a cup of tea and a little bread and butter. The patient rested for a time and feeling better again got up, when there was a return of the severe pain with marked collapse.

Dr. Carter saw her at this time and diagnosed perforation of a gastric ulcer, administered morphia hypodermically, prohibited mouth feeding, and insisted that the patient should be kept horizontal. There was at this time some vomiting. The pulse was about 80. The patient was seen by Mr. Barling soon after midday, who found her with a rigid, tender abdomen, the liver dulness practically abolished, with very high-pitched resonance in the epigastrium extending up behind the sternum; temperature 101, pulse 108 and feeble.

The diagnosis of perforation having been confirmed, it was some hours before the permission of the patient's friends could be obtained for operation. The girl was driven to the General

Hospital and operated upon at 8.30 p.m., *i.e.*, twelve hours after the perforation.

On opening the abdomen free escape of gas took place, and a considerable quantity of turbid fluid was found towards the pylorus, duodenum, and hepatic flexure of the colon, suggesting that the perforation was in the right end of the stomach. To the vertical incision first made a transverse one through the right rectus was added, and the perforation not being detected here, a further search was made towards the cardiac end. A perforation nearly half an inch in diameter and entirely free from induration was now found on the anterior surface of the lesser curvature, and nearer to the cardiac than to the pyloric orifice. This was not accessible to suturing through the wound already existing, so a further transverse incision was made through the left rectus which greatly facilitated the next step. The perforation was closed with two rows of Lembert's sutures, the abdominal cavity was cleaned by flushing with normal salt solution and gently sponging, especially in the subphrenic regions, and the incision was closed except an exit for a drainage tube. Mouth feeding was commenced at the end of thirty-six hours and the patient has made an uninterrupted recovery, being able now to take solid food without any pain.

On careful enquiry into her history before the perforation the only symptom suggestive of stomach lesion was the occasional rising of an acid fluid into the mouth, which the patient described as "heartburn," and slight vomiting two days before the perforation.

Uterine Fibroid with Ovarian Cyst.—Dr. Purslow showed the above specimens, which he had removed by abdominal section from a widow, aged 40. She was nulliparous, and had suffered from menorrhagia for several years; for eighteen months the hæmorrhage had been almost continuous, and owing to weakness and pain the patient had been bed-ridden in a Union Infirmary during that time, and was sent to the Queen's Hospital by the guardians.

There was an abdominal tumour filling the lower half of the abdomen and varying in consistence, at one point appearing to fluctuate. The abdomen was opened by an incision eight inches long, on April 30th, 1898. It was then seen that both an ovarian cyst and a uterine fibroid were present, each tumour being about the size of a six-month pregnant uterus. The cyst was tapped, and its attachment to the uterus, which covered a large area, was clamped with Doyen's forceps, and the cyst cut away. The uterus together with the fibroid tumour was then removed by the method known as pan-hysterectomy, the broad ligaments being tied in sections from above, the ends of the ligatures left long and turned down into the vagina. The abdominal wound was entirely closed. The patient made a good recovery and is now earning her own living in domestic service.

Splenectomy for Rupture.—Mr. George Heaton showed a boy, aged 9 years, on whom he had operated for severely lacerated spleen with intra-peritoneal hæmorrhage. The abdominal section was performed on December 2nd, 1898, five and a half hours after the accident. The boy was rapidly dying of internal hæmorrhage. There was no external wound. Two-thirds of the spleen had been completely torn away from the gastro-splenic omentum, and lay free in small portions in the abdominal cavity. The hæmorrhage from the torn splenic vessels was furious. They were clamped and tied, and the remaining portion of the spleen removed. No attempt was made to cleanse the abdomen of blood or portions of spleen. The boy remained in a most critical condition for several days, but afterwards made a slow convalescence. He was now apparently quite well.

During convalescence he suffered from a train of symptoms characterised by feverishness, anorexia, rapid wasting with anæmia, and marked leucocytosis, from which he slowly recovered. Mr. Heaton proposed to publish the case in full at a later date.

Nephrectomy for Chronic Calculous Nephritis.—Mr. Jordan Lloyd showed a kidney removed by lumbar nephrectomy from a man, 45 years of age. The patient had been operated on for bladder calculus some twenty-five years before, and nearly seven years ago a stone removed by lumbar nephrectomy from this same kidney. A lumbar fistula resulted from this operation, the urine always contained pus, and the man was frequently laid up by attacks of lumbar pain. The kidney was small and fibrosed, firmly fixed in its bed and was enucleated from within its true kidney capsule, the vessels being ligatured separately after being caught with forceps. The patient is making a straightforward recovery.

Vaginal Section.—Mr. John W. Taylor showed a series of eight specimens illustrating some of the many applications of vaginal section in the treatment of pelvic and abdominal disease:

1. Ovarian cyst.—Operation, August 22, 1898; discharge, September 5, 1898.
2. Tubo-ovarian cyst.—Operation, February 17, 1898; discharge, March 3, 1898.
3. Tubal mole from a case of tubal pregnancy.—Operation, December 17, 1898; discharge, January 1, 1899.
4. Tubal mole, right tube and right ovary from a case of tubal pregnancy.—Operation, November 15, 1898; discharge, November 30, 1898.
5. Uterus enlarged by chronic metritis (possibly myomatous) removed for intractable hæmorrhage, the ovaries and tubes of both sides being retained.—Operation, May 17, 1898; discharge, June 2, 1898.
6. Uterus, the seat of a growing myoma, removed together with the appendages of both sides.—Operation, November 20, 1897; discharge, December 6, 1897.
7. Uterus, the seat of cancer in the posterior wall, removed without rending the appendages.—Operation, September 27, 1898; discharge, October 15, 1898.
8. Uterus, the seat of a large myoma, removed by the combined method of vagino-abdominal "pan-hysterectomy"—Operation, November 10, 1898; discharge, December 8, 1898.

The first four specimens were removed by posterior vaginal cœliotomy; specimens 5, 6 and 7 were removed by vaginal hysterectomy. Only in the last case was it necessary to make an incision above the pubes. All of the patients made good recoveries and were convalescent in from two to four weeks after operation.

Osteoma of Arm.—Mr. F. V. Milward showed a tumour that had been removed from the arm of a woman aged 25. It was noticed for the first time three weeks after the elbow had been reduced for a recent dislocation, and was a hard swelling just above the inner condyle of the humerus, movable and causing no pain, but limiting the movements of the joint. Its position was indicated by a faint haze by the X rays. On removal it was found to consist of a shell of cancellous bone nearly half an inch in thickness, containing a cavity lined by a membrane of very delicate connective tissue with spicules of cartilage becoming transformed into bone, and containing a yellowish gelatinous material. The tumour was connected by a fibrous cord to the structures about the elbow joint.

Nævus of Soft Palate.—Mr. F. Marsh showed a boy, æt. 6, with a nævus, chiefly venous, occupying the right half of the soft palate. Two attempts to obliterate it had been made in hospitals in London, and Mr. Marsh now proposed to try electrolysis, as excision or ligature would probably mean the loss of a considerable area of the soft palate. The case was shown on account of its rarity.

Tonsil Guillotine.—Dr. Foxcroft showed one he had recently designed. The advantages of this tonsil guillotine are, first, that the two prongs attached to the knife blade transfix the tonsil and prevent it falling into the pharynx, especially important when the patient is under an anæsthetic; second, that by means of the centre piece of steel, which keeps the blade in the slide, being turned up at right angles at the forward end, the act of drawing back the blade for excision of the second tonsil ejects the first, and so no time is lost, as is the case with most transfixing guillotines when the tonsil has to be pulled off with the fingers. The instrument should be made so that when the blade is fully brought back the ends of the prongs are flush with the upturned end of the centre bar. The instrument has been made from his design by Messrs. Mayer and Meltzer.

PATHOLOGICAL AND CLINICAL SECTION.

The third meeting of the Session was held in the Medical Institute on Friday, January 27th, at 8 p.m., the President, Mr. JORDAN LLOYD, in the Chair.

Method of Increasing the Movement of an Artificial Eye.—Mr. Priestley Smith showed a patient in whom he had sutured the tendons of the internal and external recti to the conjunctiva as a first step in the excision of the eye, the object being to retain as much movement as possible in the bed upon which the artificial eye rests. In several instances it had given very satisfactory results. This method, in conjunction with Snellen's recent improvement in the form of the artificial eye, would, he thought, prove valuable in lessening the sinking and immobility too often present.

Dr. Kauffmann showed a boy, aged five, who suffered from spastic paresis of both legs and arms, slightly more marked on the right side. The paralysis first appeared four months before, immediately after the patient—then in perfect health—was knocked down at play. When picked up he was unable to stand, but this power returned in a few hours, and on the following day he walked to school; but on the same day the power of walking again left him. From that time until his admission to hospital the father had noticed no change in the child's paralysis, either progressive or regressive. At present the gait was feeble and uncertain and the feet were kept wide apart, but there was no reeling. There was slight unsteadiness of co-ordinated movements in the legs in the recumbent posture, and some similar unsteadiness in the hands, resembling that met with in early insular sclerosis. There was no interference with sensation. The superficial reflexes on admission were all lively, but within the last fortnight the plantar reflexes had gradually disappeared, the others being preserved. There had also been observed an increasing contracture of the calf-muscles, so far easily overcome by pressure on the foot; and quite lately a spastic flexed attitude of the hands and arms had been noticed.

All the limbs were unusually weak, the right hand showing this a little more than the left. The intelligence and mental state were in excellent order; speech had at no time been affected, and the eyes showed no abnormality whatever. The family history was beyond reproach. There was no muscular atrophy and the general nutrition was good. Dr. Kauffmann inclined to regard the case as one of psychical neurosis set up by the injury.

Duodenal Growth.—Dr. Foxwell showed the liver, bile ducts, and duodenum of a man aged 39. The gall bladder was much thickened, and its mucous membrane ulcerated in places. The cystic duct was normal in size, but the common and hepatic ducts were greatly dilated up to half an inch in diameter. The liver was enlarged and olive green in colour (in life reaching below the umbilicus). In the duodenum, apparently surrounding the ampulla of Vater, was a large ulcerated cancerous growth, deeply placed in the duodenal wall. The patient was a railway carter, muscular and well built; both his previous and family histories were good. Eighteen months before admission he had an attack of jaundice, loose, white stools and dark urine, lasting three months, during which he lost 18 lbs. In January, 1898, he had a second similar attack, losing the 14 lbs. which he had regained since the first attack. The present (third) attack began in September. He had only regained 4 lbs. in weight since the second attack, and during it he lost another 14 lbs. At no time had he observed any pain or tenderness. He was admitted under Dr. Foxwell, December 20th, and died January 15th. His temperature was hectic throughout, at first 97° to 101°, later 97° to 99·5°, and then rising slowly to 97° to 102°. The liver was somewhat tender to firm palpation, and his jaundice steadily increased. On January 13th Mr. Marsh opened the gall bladder and let out 34 ozs. of a transparent mucous fluid the consistence of glycerine. He was unable to pass a probe through the cystic into the common duct, nor did the common duct feel dilated, but the large size of the liver and the unsatisfactory condition of the patient made a thorough examination very difficult. The absence of pain and the presence of hectic with wasting made Dr. Foxwell look upon the case as one of ulceration of the ducts, though the questions of stone and growth were naturally discussed; indeed, three very small stones were found by Mr. Marsh at the time of operation. The difficulty of passing a probe into the common duct was probably due to kinking of the cystic duct somewhat early in the illness, owing to the double distension of ducts and bladder. There was no evidence of growth anywhere else in the body.

Sutured Intestine.—Mr. John W. Taylor showed two specimens of sutured bowel removed from a patient, aged 47, who had been suffering from chronic obstruction of the small intestine. Operation was performed on January 29th, 1898, and the obstruction was found to be due to very dense adhesions. In undoing these the bowel had to be cut away and at the most constricted part was slightly opened. The opening was closed by a fine continuous suture, but the operation was followed by a small fæcal fistula. A second operation was accordingly done on June 9th. At this operation the whole of the diseased portion of intestine was excised and the healthy bowel (above and below) united—end to end—by a double continuous silk suture. During the operation the patient had an apoplectic fit from which she never recovered. She remained unconscious and died, with a rising temperature, on the third day. On opening the abdomen after death no trace of any peritonitis was found, and the sutured bowel was in perfect condition.

The specimens produced showed—1. Small intestine sutured longitudinally. The upper part was still dilated and a very fine track (of fistula) could be seen proceeding from this to the skin. 2. Small intestine showing circular suture and union after excision.

Ulcerative Colitis.—Dr. Foxwell showed the colon of a woman, aged 25, which was intensely ulcerated throughout, except the upper three inches; the transverse portion being most severely affected. The ulcers were of large size, sometimes tracts three inches long; they tended to be arranged in horizontal lines, and the mucous membrane between them showed great congestion, but no definite polypoid growths were seen. The ulcers were all deep, and fæcal extravasation had occurred in several places. The omentum was plastered down over the intestines; the stomach was dilated; the liver soft, very dark brown, and friable. The onset of the illness was sudden and definite, six and a half weeks prior to death. The symptoms were throbbing pain in the lower abdomen on both sides, but chiefly on the left; this pain was increased by food, drink, and exertion; also diarrhœa, severe, but without tenesmus, the stools resembling pea soup, often having small flakes of blood, but no mucus nor shreds of false membrane. With these were increasing weakness and emaciation, though she was able to continue her work for seventeen days. She was only 4 ft. 9 in., and weighed 6 st. 8 lb. Her mother died of phthisis at 26, and her father of gastric cancer. She died a week after admission. During her stay in hospital she had six to twenty stools a day, of the nature above described. The temperature was irregularly hectic, reaching 104°. The abdomen above the umbilicus appeared normal, but below it was doughy, bulging, tender in patches, but nowhere dull nor rigid. An ulcer arose on the tongue and rapidly increased to the size of a sixpence. She was perfectly conscious to the last, asking for a drink of water three minutes before she died.

Liver from a case of Gall-stones.—Dr. Stanley showed this specimen.

Disease of Elbow-joint.—Mr. Jordan Lloyd showed parts forming elbow-joint removed that morning from a man 26 years of age, who had symmetrical elbow-joint disease of nearly two years' duration, which had the clinical characteristics of Brodie's chronic gelatinous synovitis. The man was of typical tuberculous type, and his neck was scarred with the old cicatrices left by chronically suppurating glands during childhood. The bones removed showed in parts well-marked features of so-called "chronic rheumatoid arthritis"—"stalactitic osteophytes, patches of 'enamel' induration," etc:—whilst in other parts they presented the naked-eye characteristics of chronic tuberculous degeneration. Mr. Lloyd thought the joint presented evidence of a double affection—a combination of tuberculous and of "rheumatoid" processes.

MEDICAL DEPARTMENT OF THE NAVY.

ADMIRALTY,
NORTHUMBERLAND AVENUE, W.C.
6th February, 1899.

An Examination of Candidates for Entry into the Royal Navy Medical Service will be held on the 8th May next, and following days, at Examination Hall, Thames Embankment.

The number of Commissions to be competed for will be announced later on.

The forms to be filled up by Candidates will be supplied on application to this Department.

H. F. NORBURY,
Medical Director General.

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superior vena cava, and at present she showed large prominent tortuous subcutaneous veins crossing over the front of the chest and carrying blood downwards into the diaphragmatic veins and to the umbilicus. The patient had noticed no change in these veins during the last few years, and in general health she was well. Her only inconvenience was cyanosis of the face on stooping when her diaphragm is more or less fixed. There were no other pressure signs, and the cicatricial contraction appeared to have come to a standstill. The older patient had developed gradually within the last eighteen months signs of pressure on the right innominate vein together with a smooth uniform swelling in the right supra and infra clavicular regions. Within the last twelve months her voice had become hoarse, and laryngoscopic examination showed some ulceration of the right vocal chord. There had likewise appeared on the right side of the neck, a cicatricial formation, somewhat resembling keloid; but generally held by those who saw the patient to be syphilitic in nature. A doubtful history of syphilis was obtained. This patient was likewise in good health, free from pain and from anginal attacks, and the disease seemed to be no longer progressive, from the fact that the veins had not materially altered within the last six months. In neither patient were there any abnormal physical signs in the heart or lungs.

Paper.—Mr. J. W. Taylor read a paper on "Gonorrhœal Salpingitis, its medical and surgical treatment "

The third ordinary meeting of the Society was held on Wednesday, December the 7th, at the Medical Institute, Birmingham, the President, Dr. W. G. Lowe, being in the Chair.

The following gentlemen were elected members of the Society:—Mr. Frank Barnes, Mr. A. W. Forrest, Mr. T. H. Gibbs, Mr. Stuart Macdonald, and Mr. W. G. Thomas.

Dr. Stanley showed a child, aged two years, who had suffered from marked Pemphigus since birth. Large bullæ appeared at times over the legs, feet, arms, hands, face, and in the mouth. The child showed some rachitic tendency, but there was no positive evidence of syphilis. Various methods of treatment had been tried, but without result.

Dr. Stacey Wilson showed a specimen of œsophageal varices.

Dr. Purslow showed a cast of the vaginal wall. This had been produced by the use of a quack remedy for certain diseases of women, which was sold in the form of soluble pessaries. Under the microscope the cast showed that the superficial layer of squamous epithelium had been removed, almost the whole lining of the vagina being represented. Analysis of the remedy kindly made by Mr. John Barclay, B.Sc., showed it to consist of potash-alum, cocaine, borax, opium, slippery elm-bark powder, and vaseline.

Mr. Lawson Tait showed a specimen of Pyosalpinx.

Dr. Purslow read a paper on four cases of Pregnancy complicated with Ovarian Tumour.

Mr. Furneaux Jordan read a paper on the Advantages and Disadvantages of Vaginal Cœliotomy.

The fourth ordinary meeting of the Society was held on Wednesday, January the 18th, 1899, at the Medical Institute, Birmingham, the President, Dr. W. G. Lowe, being in the chair.

The following gentlemen were elected members of the Society:—Mr. J. E. A. Chatelier, Mr. J. Morgan Evans, Mr. W. Duncan Lawrie, Mr. J. McCall, and Mr. J. Orton.

Dr. Stacey Wilson showed a case of cretinism in a child aged three, who had improved most markedly under treatment. Before treatment was commenced, the child was in every way a typical cretin. After taking three grains of thyroid extract once a day for a month, the improvement in all symptoms was most marked. The child became bright and lively, and also cut two teeth in addition to the seven he had previously had.

Dr. Stacey Wilson also showed a case of post-hemiplegic disorder of movement in a young woman aged twenty-two. The history of the case is as follows:—

When eleven years of age, she had an attack of right hemiplegia with aphasia. She was unconscious for five weeks, and recovery from the paralysis was very slow. At the end of twelve months, there was still complete paralysis of the arm, although the other paralyses were passing off. Shortly after the return of motor power in the arm, a spastic condition became superadded. For the last four or five years the hand has been firmly clenched, and the patient has been quite unable to open it. There have also been continuous spasmodic contractions of all the muscles of the arm with some irregular movements of extension and flexion. The muscles of the right arm were all hypertrophied. She was treated by fixation of the arm and hand on a splint The arm was kept fixed in a manner for some weeks. As a result of this enforced quiet the morbid habit was broken, and the patient regained the use of the hand and arm. She still has irregular movements of the hand and arm when excited, but her voluntary power is rapidly increasing. The most interesting feature is the good result obtained by limiting for only a few weeks the spasmodic movements.

Mr. Barling showed a patient, aged 40, on whom he had performed the operation of gastro-jejunostomy for pyloric obstruction, causing dilatation. The patient had suffered from indigestion for the last thirty years, and during the latter part of the time he was told by his doctor that he suffered from ulcer of the stomach. During the last four years he had suffered severely from pain in the epigastrium, and in the left chest and back, with attacks of vomiting. Latterly these attacks have been unusually severe, but the vomiting has not been constant, but would occur every three or four days, when a very large amount would be brought up, and the patient would be able to recognise portions of the food taken two or three days before. At no time has he vomited blood nor has he recognised anything in the stools indicating hæmorrhage. He had lost weight for many months slowly, but rapidly during the few weeks previous to his operation. Examination of the abdomen failed to show any tumour or thickening in any part of the stomach, but there was marked dilatation of the organ, when it was distended with carbonic acid gas, the lower margin reaching then three inches below the umbilicus. In November last Mr. Barling opened the abdomen in the middle line, and a thickening was at once recognised at the end of the pylorus, but considerable doubt was felt as to whether this was an early growth or severe cicatrisation round a chronic ulcer. In the presence of the doubt it was felt wiser to do gastro-jejunostomy rather than a pylorectomy. An anterior gastro-jejunostomy was therefore performed with Murphy's button. The patient progressed most satisfactorily till the tenth day, when he complained of distension, the stomach was found dilated, the patient became extremely feeble and his temperature dropped to 96°. By occasional washing-out of the stomach, limiting of the diet very carefully, and constant stimulation, the stomach symptoms were relieved, and the patient who was apparently moribund for a few hours revived and was discharged from the hospital on January 1st. His weight on December 22nd was 6 stones 9¾ lbs., and at the present time (Jan. 18th) it is 8 stones 6½ lbs. The explanation of his stomach symptoms and collapse on the tenth day is not easy. It may have been due to the drag of a distended colon, kinking the jejunum and so obstructing that part of the intestine beyond the point of anastomosis, an accident which not infrequently happens in the early days after this operation, or it may have been due to the button which had now separated obstructing the calibre of the jejunum. The button has so far not been voided.

Mr. J. Furneaux Jordan showed a specimen of fœtus in amniotic sac removed from a case of tubal pregnancy. The patient was aged thirty-four, had been married thirteen years, had two children, the youngest aged ten, but no miscarriages. She menstruated regularly till August last, the last being slight in amount with occasional pain. She has not menstruated since the beginning of August, and in September had her first attack of acute pain lasting for some hours in the left lower abdomen. She has had pain in the same region ever since with occasional exacerbations, especially at what would have been her monthly periods In the first few weeks of her illness she got much thinner. There was no hemorrhage at all from the uterus. There was severe constipation and great pain on defæcation. When first seen by Mr. Jordan, at the end of November, her temperature was

101·4° and had been up in the evening for some days. Examination then revealed a tense elastic swelling behind the uterus, filling up both posterior quarters of the pelvis, above the brim of which it could be felt. The uterus was pushed forward and to the right. The swelling was acutely tender. On December the 12th, Mr. Jordan operated at the Women's Hospital. On the supposition that it might be a double pyosalpinx, posterior colpotomy was done, but on entering Douglas' pouch the swelling appeared cystic, and it was tapped. Clear fluid came away, the abdomen was then opened, and a large left tubal pregnancy with intra-peritoneal hæmatocele was removed. A four months fœtus in amniotic sac was in the hæmatocele, in which also the outward end of the tube was lost. The clear fluid drawn off by the vagina was amniotic fluid. The outer firm layer of the hæmatocele was universally adherent. The patient is now quite well.

Mr. Barling showed a specimen of catheter à boule, removed from a very stout man, aged fifty-six. The man was the subject of six herniæ, of chronic eczema, and of a stricture of the urethra, for which he had been in the habit of passing an instrument himself. He presented the symptoms of stone, and on sounding one was detected, and as the stricture was easily dilated to take a lithotrite, crushing was resorted to in preference to supra-public lithotomy. There was no suspicion that a portion of catheter was in the bladder, but at the time of crushing the fragments appeared extremely soft. This was explained on using the evacuator, when the fragments washed out proved to be bits of catheter coated with salts. When questioned about the matter, after the operation, the patient acknowledged that he had broken off in his bladder a portion of catheter about an inch long some weeks before.

Dr. Suckling read a paper on Epilepsy.

The fifth ordinary meeting of the Society was held on Wednesday, February the 8th, at the Medical Institute, Birmingham, the President, Dr. W. G Lowe, being in the chair.

Mr. Jordan Lloyd showed the pelvic genitalia which had been removed *post mortem* from a woman thirty-six years of age, who had died of acute general pulmonary tubercle. She had never menstruated, but had always had fair health, although somewhat delicate in childhood. The cervix uteri was normal in structure, and 1¼ in. long. The body of the uterus was small, about 1½ in. long. Its cavity was obliterated, and contained old cretaceous tubercular deposit. Each Fallopian tube was blocked by a cretaceous nodule the size of a pea, within an inch of the fundus uteri. Up to the points of blockage the tubes were of normal thickness, but beyond this they were atrophied to about 2 mm. in diameter. The fimbriæ of the right tube were open, and those of the left closed by old peritoneal adhesions. The ovaries were normal in size and structure, and contained Graafian vesicles. Many of the mesentery glands were full of ancient tubercle, which had evidently been laid down many years before. The vagina was normal. The absence of menstruation was clearly due to the obliteration of the uterine cavity and the plugging of the Fallopian tubes as above described. There was no other tubercle in the abdominal or pelvic cavities.

Mr. Jordan Lloyd also showed a left kidney removed successfully by lumbar nephrectomy from a woman twenty years of age, who had suffered since childhood from periodical attacks of lumbar pain with diminished urine and the appearance of a tumour in the lumbar region—the symptoms disappearing with polyuria and the disappearance of the tumour. It was intended to transplant the ureter to a new attachment to the renal pelvis, but at the time of the operation there were practical difficulties in the way of carrying out this procedure satisfactorily. The kidney was therefore removed. The stalk of the kidney was first clamped by Doyen's forceps and the vessels and ureters tied separately. The forceps were then removed. The patient made an easy recovery.

Mr. Christopher Martin showed an improved form of Sterilizer. It consisted of two chambers, the lower chamber being used for boiling instruments in soda solution whilst the upper chamber was for steaming dressings, towels, gauze swabs, etc. The lower chamber was large enough to hold an ordinary pair of midwifery forceps. The steam was conducted from the lower to the upper chamber by a pipe which delivered it near the top of the latter. Near the floor of the upper chamber three small holes were made to permit the escape of steam. By this arrangement the current of steam in the upper chamber took place from above downwards. He had also had a strong canvas case made into which the upper chamber could be packed. It then formed a convenient and perfectly aseptic method of carrying instruments, dressings, swabs, etc., from the surgeon's house to the patient's.

Mr. Martin also showed an acetylene lamp for surgical operations. It is essentially an acetylene bicycle lamp to which a convenient handle had been applied and to which he had had fitted a reflector which could give either a horizontal or a vertical beam of light. The whole packed into a neat leather case. It gave a brilliant light, was inexpensive (compared with electrical lamps) and was very portable. Its only drawback was the somewhat objectionable smell which all acetylene lamps gave off. Both the steriliser and the acetylene lamp had been made for him by Mr. Ash, Edmund Street, Birmingham.

Mr. J. Furneaux Jordan read a paper on the Advantages and Disadvantages of Vaginal Cœliotomy.

BRITISH ORTHOPÆDIC SOCIETY.

The Annual General Meeting of this Society took place at the Westminster Hospital on December 9th, 1898. Messrs. Freer, Robert Jones, and William Thomas were elected members of Council *vice* Messrs. Openshaw, Thelwall Thomas, and Brodhurst A Transactions Sub-Committee was elected and other officers re-elected, with the exception of the Provincial Honorary Secretary, to whom a cordial vote of thanks was passed for his services during the past four years.

An Ordinary Meeting was held after the Annual Meeting. Mr. Horrocks Openshaw's paper on Tendon Re-implantation was then read. Mr. Openshaw defined the proceeding as the transference of the tendon of a healthy muscle from its normal situation, and its attachment or implantation or grafting upon the tendon of a muscle which is more or less completely paralysed. After giving a brief *résumé* of the cases of Nicoladoni—who was the first to operate (in a case of Talipes Calcaneus)—of Pochas; of Lille Milliken, of New York; Goldthwaite of Boston, and others in this country, all of whom reported satisfactory results, with few exceptions, he said that it was apparent that almost every tendon near the ankle had been used to strengthen every other muscle when paralysed. Thus tendons had been transferred from the flexor to the extensor side of the joint, and the Tendo Achillis had been made (by Vulpius) to act as tibialis anticus and peroneus longus, as well as in its normal function. The possible procedures were enumerated and commented on and their advantages and drawbacks noted. Mr. Openshaw said that for talipes calcaneus Nicoladoni's original operation of implantation of peronei had in his four cases given excellent results. For paralysis of the tibialis posticus he had transplanted the tendon of the peroneus longus (which he thought was an original procedure) with success. The cases had been shown at the last meeting of the Society.

He thought that no case ought to be submitted to these operations until an attempt had been made to cure any contraction of fascia or of tendon by section and instrumental treatment. In some cases that had been shown it was difficult to say how much of the improvement was due to the tendon implantation and how much to the incidental tenotomies. For instance, in some cases equinus existed, and this was manifestly benefited by the tenotomy of the Tendo Achillis alone. In complete palsy—of all the muscles around the joint—the treatment was inapplicable, and Arthrodesis was better. The most favourable cases were those in which only one or parts of two groups of muscle were affected. The most satisfactory were those of Talipes Calcaneus, Calcaneo-valgus or Valgus. As a general rule a muscle should be selected whose action was most nearly allied to that of the paralysed one. In some cases it was advantageous to take an antagonist that was producing distortion by its unopposed action, and make it correct the deformity at the same time that its section remedied contraction. This proceeding must be adopted cautiously lest too much were done and the opposite deformity produced.

In conclusion—1. All cavus, equinus, spasm, and shortening of tendons ought to be previously cured. 2. Strict asepsis of the limb must be secure. 3. The tendons should be as little disturbed as possible. 4. The parts exposed should be kept warm with lotion, say 1 per cent. carbolic acid. 5. As large an area of each tendon as possible should be denuded of tenosynovial membrane. 6. The tendons should be very firmly united. 7. The wound should be dressed antiseptically and the foot immobilised for two or three weeks

The method of attaching the tendons together was most important. Unless they were firmly joined the benefit of the operation was lost. Possible untoward results were—1. Overcorrection. 2. Sloughing of tendons. 3. Suppuration with failure of union. 4. Stitch abscesses.

Sloughing arose from too much interference. Suppuration and stitch abscesses from defective suture material. Stout catgut he believed to be the best. It was practically impossible to sterilize kangaroo tendon and silver wire; silk and silkworm gut were not absorbed. He had seen silk in particular cause very troublesome abscesses weeks after primary union. Goldthwaite's operation of insertion of the sartorius into the tendon of the quadriceps for palsy of extensors of the knee must not be overlooked: very good results were claimed for it. He had seen one case in which there was distinct improvement despite the occurrence of stitch-abscesses from the use of silk. He thought this operation would be more extensively resorted to ere long.

The meeting closed with a vote of thanks to the Committee of the Westminster Hospital for the use of their Board Room.

KIDDERMINSTER MEDICAL SOCIETY.

Meeting held on 27th January, 1899, Mr. E. H. ADDENBROOKE, President, in the chair.

Mr. J. Lionel Stretton showed:—

1. A girl, age 20 years, upon whom he had performed excision of the elbow-joint three years previously. She is now able to conduct the duties of domestic servant, she can carry a bucket of water, and all her movements are perfect.

2. A cystic tumour, weighing 3 lbs. 12 oz., removed from the scalp of a man, age 69. Four years previously a large sebaceous tumour was removed from the same situation.

3. A man, age 63, upon whom he had operated for recurrent epithelioma of the lip. In order to fill up the large gap a triangular flap of skin was dissected from the neck, turned up and fixed between the two portions of lip with a satisfactory result.

Mr. W. Hodgson Moore showed a melanotic sarcoma, removed from the cheek of a woman age 69. The growth supervened on a mole, and she refused to have it removed until it had extended so much that considerable deformity followed the operation. Mr. Moore advocated the removal of all moles, as he considered them so liable to malignant changes.

Mr. Oliphant showed:—

1. The brain of a woman, age 50, who died in the hospital. There was a spindle celled scarcoma, about the size of a turkey's egg, growing from the meninges over the fissure of Sylvius on the left side, and compressing the frontal temporal lobes. The points of interest about the case were—a very indefinite history and the fact that her symptoms materially improved

under iodide of potassium; her pulse was never rapid, her temperature never subnormal, there was no vomiting or convulsions, and her mental condition remained clear to within a few hours of death.

2. Skiagraph of a fracture of the right tibia in a young man age 21. He slipped at football, and when admitted to the hospital there was so much swelling that an accurate diagnosis could not be made. The skiagraph showed a transverse fracture through the thickest part of the lower end of the tibia, and a second through the internal malleolus, which was displaced downwards to an extreme degree.

Mr. B. Addenbrooke showed specimens of tubercle bacilli in milk.

Mr. J. Lionel Stretton read a paper on "The Treatment of Tubercular Disease." After an interesting discussion the following resolution was adopted:—"That the attention of the local authorities be drawn to the importance of safeguarding the public from the spread of tubercular disease."

REVIEWS.

◆

NATALITÉ ET DÉMOCRATIE.*

While every other country in Europe continues to increase its population, that of France, taken as a whole, is stationary, and many of its departments are becoming extensively depopulated. This is a matter of national importance, alike from a patriotic, economic, and scientific point of view, and it is of increasing interest to ourselves in consequence of recent social changes in this country, which show a tendency to approximate to the condition of France. The questions which arise for consideration, and the lines of thought along which the study of this subject takes us, are neither popular nor definite, here, and there is practically no English literature nor discussion in this department. The facts concerning our births, marriages, and deaths are ably classified and set forth by successive statistical superintendents to the Registrar-General, and are equally attractive and instructive; but while the study of mortality is well advanced, and the body of facts concerning it and the laws which govern them have almost become a special science in the interests of life assurance and sanitation, the statistics which relate to births and the laws which govern them are still in the skeleton state, waiting a time when they too will be covered with flesh and form. The words natality and nuptiality, the equivalents of mortality, have not been adopted in the English language, and it is otherwise deficient in terms to express ideas and trains of thought belonging to this subject. France is in a much more advanced state. The causes, facts, and consequences of its depopulation have been studied and analysed, and the ideas associated with it formulated, defined, and named. When an intelligent and high-spirited people find themselves face to face with a slow but sure tendency to self-extinction feeling becomes intense, words take new warmth and colour, and details assume great relative importance.

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* Natalité et Démocratie. Par Arsène Dumont, Membre des Sociétés d'Anthropologie et de Statistique de Paris. Paris: Schlercher Frères, Editeurs. 1898.

The editor of the *Brit. Med. Journal* has recently drawn our attention (p. 165, Jan. 99.) to a work lately published by M. Arsène Dumont, on Natalité and Démocratie, who has been engaged in studying the subject of French depopulation for many years, and has republished seven lectures given to the Society of Anthropology of Paris (of which he is a member) during the winter of 1896-7. A short review of these will throw considerable light upon this complex question, and they are not without pathos as a warning note of the danger of decadence impending over that nation and as a beacon to others. He refers in his preface to his ungrateful task as a Frenchman advising his country, yet obliged to state that it is attacked with an evil which threatens its existence and in a condition incompatible with a sufficient renewal of the race.

This danger is sufficiently great to cause him to consecrate his life to study its nature, causes, and remedies, and to which he had already given fifteen years of journeyings, sojournings, and investigation. We are not yet familiar with that social phrase, which presents itself in a visible decrease in our population, but our author eloquently describes the grave inconveniences attending it to the individual, the state, and the race. Ten years ago he would have been taxed with exaggeration in applying the word depopulation to France, but in 1895 there were 58 of the 87 departments in which the population was diminishing, and in 10 of these the deaths were to the births in the relation of 1000 to 8-700, and in 2 to 7-600. Births and deaths are the chief though varying factors in the population; the natural increase of our own is represented by the difference in favour of the births over the deaths (corrected for migration), and the natural decrease in France is due to the deficiency in the births as compared with the deaths. The annual tribute paid to death is not higher in France than the average, and need not be greater than in England, if reduction had been sufficiently attended to, but (he says) our attention has been distracted thence by other cares; we present the picture of a nation very much pre-occupied with playing its *rôle* with honour in the drama of history, but careless of maintaining its health or making sure of its future.

The mortality rate contributes in only a small degree to the French depopulation, the great, the primary reason being that its birth rate is by far the lowest in Europe, and the reader's attention is almost entirely drawn to the part this plays as a factor in its production. Although Malthus is referred to, it is only once, as a false prophet who raised an alarm against danger from overpopulation and depopulation is produced; but the book is really an earnest and eloquent attack on the Malthusian doctrines and practical Malthusianism. There were seven departments in 1893 where the births were from 14 to 17 to each 1000 of the population, and in only 13 of the 87 were they above 25, which he considers the minimum compatible with social health, any smaller amount being an index of a pathological condition, whatever the death rate may be. He proceeds to show that there are three factors concerned in the amount of births among a people; illegitimacy, extent of marriage, fertility of marriages. The first, which is rather more than double the English, but less than the Scotch, tends towards increasing, which he thinks not undesirable at the expense of sterility, though not so at the cost of legitimacy. As there has been only a moderate decline in the marriage rate, which is about the same as in England, there only remains the insufficient fertility of marriage as the explanation of the excessively low birth rate. The average is three births per marriage, while nearly all the European countries attain to four. In any one year 11½ per cent. of married women have a child in France, but 20 per cent. do so in Belgium, Germany, Britain, and Italy. The cause of the depopulation and demographic decadence of France resides then in the infecundity of French marriages, not to the great number of sterile marriages, but to a too small average in the family. There are still a number of large families to be found there, and it was estimated in connection with a scheme to give either a trousseau or free admission to a higher school to any one child designated by a parent who had seven living children that 20 per cent. of the families would have claimed it. The explanation, therefore, is not physiological, nor from the extinction of families, through degeneration, war, social selection, still births, *métissage* (*métis*, a mongrel), nor national old age, to each of which it has variously been assigned by social philosophers. It is voluntary.

The reason half the French families are insufficiently fertile is because any larger fertility is deliberately interdicted. M. Dumont says he has found entire populations where the fact is not hidden but proclaimed; no mystery envelopes the ruling maxims and governing influences of conduct, the proverbs, the formulated local sayings, and counsels given to young spouses by their parents. The father who forgets himself and has three children is severely blamed by his wife's family, is coldly received by his own, rallied by his friends, condemned by his acquaintances, for he is a tyrant, a wretch, and a bungler. In some districts the man loves his wife and children with a feeling so deep as to make him regard as negligeable quantities the inconveniences, poverty, sickness, dirt, disorder, cries and tears, and all the other things that poets and others call the "*hideurs de la fécondité.*" The explanation of the difference is the general idea that after all each individual is complete in himself and a failure to recognise the necessary co-ordination of particular effects for the accomplishment of social functions indispensable for the general good. It may develope in other directions, such as a decline of patriotism, a prevalency of divorce, a passion for suicide, illegitimate births, delay of marriage until late in life, centripetal emigration, and other forms of over-civilization. The perspective of a generation of only sons and daughters all awaiting leisure and fortune at the death of their parents inspires a dread for the family and the country, for only sons mean not only less citizens for war but by those who are badly endowed for war.

Nations who have colonists send out colonies for the expansion of the race, and have a guarantee for a future place in the world, an opening up of infinite horizons, but for France alone in Europe the decay of births forbids such hopes.

It is not easy to sum up in a few sentences the author's elaborate explanation of the reasons why this voluntary sterility, like a poisonous influence, prevails in most parts of France to the exclusion of others. There are certain classes in which egoism is much stronger than others, whose members crave to rise above their natural position, rank, and state in life, and find in pregnancy and the cares of children an encumbrance and obstacle to success. He instances part of the department of Orne, with a birth-rate of 8·7 per thousand for a decade, consisting of landed proprietors, as contrasted with a birth-rate of over 50 among a body of poor fishermen living a hard sea life near Dunkirk. Ranks where there is no temptation to rise, but are satisfied with the home and family employment, workpeople and agricultural labourers, keep up the birth-rate. It would appear as if poverty maintains the race, riches and ease hold court with its death. There are, however, no hard and fast lines, and there are many other points which ought to be considered which space forbids. Knowledge of the means counts for much. The last word has not been said as to these causes, and the subject of practical remedies has still to be considered, but where the practice prevails the people remaining are not richer, better, more instructed, or more moral, but more idle, more sad, more wearied with life, more useless to themselves and everybody else. In the midst of peace and abounding security a race perishes; the land was fertile, it became sterile; a spontaneous debility, a kind of anæmia supervenes. Such a testimony from such a witness cannot be disregarded.

The tone of these lectures is good, the taste excellent, the style pure and classic. Being in lecture form there is some recapitulation and overlapping, but their perusal is wholesome reading at a time when our own great and continuous birthfall, though kept in the background, will force itself more and more upon public attention.

HENRY MAY.

DIET AND FOOD.*

DR. HAIG has done much excellent service in calling attention to dietetic excesses and errors. It is true that doubt has been thrown upon the correctness of much of his chemical work, and that it is difficult at the present time to follow him in his views on the pathology and chemistry of the uric acid diseases. Nevertheless, though probably wrong in details, he is undoubtedly right in denouncing the harm done in many cases by the consumption of an unsuitable diet, and his dietetic treatment of many cases of disorder due to such causes has been in the highest degree successful. It is therefore all the more regretted that Dr. Haig has lost influence by allowing this idea to carry him to extremes.

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* Diet and Food, considered in Relation to Strength and Power of Endurance, Training and Athletics. By Alexander Haig, M.A., M.D. Oxon., F.R.C.P., Physician to the Metropolitan Hospital, and the Royal Hospital for Children and Women. London: J. and A. Churchill. 1898.

In the present book Dr. Haig devotes himself mainly to the demonstration of three propositions—namely, the comparative worthlessness of pure fats and carbohydrates considered as articles of food, and the reliance to be placed upon the excretion of urea as an exact measure of the physical force produced in the body; the dependence of fatigue—other than that resulting from a too prolonged abstinence from food—on the presence of uric acid in the blood; and finally, the value of certain diets from the point of view of physical force production, and especially a diet consisting only of cheese, milk, potatoes, and fruit.

The book is worth reading, because it contains many sensible remarks upon the subject of diet, but its pathology is questionable, and the whole book reveals the old tendency to regard uric acid, and uric acid alone, as the cause of nearly all morbid conditions.

ATLAS AND EPITOME OF OPERATIVE SURGERY.*

This atlas of operative surgery has much to be said in its favour. The rules and methods of procedure laid down are clearly and emphatically expressed; the coloured plates and illustrations are excellent. But it appears to us not to come up to the works of Treves or Jefferson. Throughout, too much stress is laid upon the use of the director in the division of tissues and on tearing apart the tissues with dissection forceps. In suturing the bladder, catgut is advised, contrary to the custom in this country where silk is preferred. In amputation of the extremities, many methods are described, but the author does not state his reasons for adopting one in preference to the other.

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*Atlas and Epitome of Operative Surgery. By Dr. Otto Zuckerkandl. Translated and Edited by J. Chalmers Dacota, M.D., Clinical Professor of Surgery in Jefferson Medical College, Philadelphia; Surgeon to the Philadelphia Hospital, etc. London : The Rebman Publishing Co., Ltd.

Stephen Smith's amputation at the knee-joint is not even mentioned. The lines for exposure of the motor areas of the brain are very inadequately described, the only description given being that, "the upper extremity of the Rolandic fissure lies in an antero-posterior plane, 1·2 c.m. behind the middle of a line uniting the root of the nose with the occipital protuberance."

The latter part of the book dealing with operations on the abdomen and rectum is by far the best; the methods of performing radical cure of hernia and intestinal anastomosis being particularly well illustrated and described, as are those also of excision of the rectum.

TESTS AND STUDIES OF THE OCULAR MUSCLES.*

In this book, which consists of 14 chapters, Dr. Maddox has culled from the literature on the subject a selection of the best tests for the efficiency of the ocular muscles, together with some original ones.

Chapters 1–6 deal with normal conditions of the muscles, whilst the remainder deal with the pathological affections to which they are subject, together with some physiological facts.

In Chapter 1, which is devoted to the anatomical consideration of the eye and its socket, there is a full and clear description of the check ligaments, Tenon's fascia, and the exact method of insertion of the muscles into the sclerotic.

The chapter on Strabismus gives a good account of the present state of our knowledge on this important subject; it is supplemented by an appendix, in which a short account is given of Priestley Smith's Heteroscope and some of the many interesting points he brought forward in the Bowman Lecture for last year.

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* Tests and Studies of the Ocular Muscles. By Ernest E. Maddox, M.D., F.R.C.S.E. Bristol: J. Wright and Co.

The work is one which will be welcome not only to ophthalmic surgeons but also to neurologists. The author has dealt with this difficult subject in a lucid style, and we can thoroughly recommend it to all those who are interested in this important subject.

DISEASES OF THE SKIN.*

We are glad to see that a second edition of this useful little book has been issued. A good deal of new matter has been introduced, and the book has been brought up to date, notably in the section on Ringworm; at the same time, we note with satisfaction that it has grown very little larger. This shows that a revision has been made, and that the author has not contented himself with interpolating paragraphs here and there. The two new plates that have been added, illustrating respectively special micro-organisms and the vegetable parasites of the skin, are good, but the coloured plates, taking them altogether, are not so well produced as those in the volume of the first edition sent to us for review. Plate 1 is decidedly inferior, and the plates illustrating zerodermia and secondary syphilis have not caught the true colours of the original productions.

A DIRECTORY FOR THE DISSECTION OF THE HUMAN BODY.†

This book contains in compact form instructions for the dissection of the human body, together with a brief description, often little more than an enumeration, of the structures met with. It is therefore in no sense a text book on anatomy, though the authors give references to their own systematic treatise, which will enable the student to read up in full the parts with which he has just made a practical acquaintance. We are inclined to think that this is a more suitable book for the dissecting room than the more elaborate works usually made use of. What is mainly wanted there, is a guide which will contain instructions as to procedure and the means of recognising the structures exposed; and this is just what the book supplies.

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* Diseases of the Skin. By Malcolm Morris. New and Revised Edition. London: Cassell and Co. Limited. 1898.

† A Directory for the Dissection of the Human Body. By John Cleland, M.D., LL.D., F.R.S., Professor of Anatomy in the University of Glasgow, and John Yule Mackay, M.D., Principal and Professor of Anatomy, University College, Dundee. Fourth Edition, Glasgow: James Maclehose and Sons., 1898.

SYLLABUS OF MATERIA MEDICA.*

We have received a copy of the well-known syllabus of the British Pharmacopœia originally drawn up by Drs. Harvey and Davidson, and revised by Mr. Martindale. This edition differs from its predecessors only in respect of the changes necessitated by the new issue of the Pharmacopœia. It is certain to be appreciated by students, with whom the compact statement of preparations and doses is a material aid to memory.

ATLAS OF EXTERNAL DISEASES OF THE EYE.†

This book contains a very large number of beautiful photographs and chromo-lithograph plates illustrating every external disease of the eye usually met with. The cases from which the plates have been taken have for the most part occurred in the author's practice, and have evidently been selected with extreme care, so that typical examples might be given of each disease. The plates are accompanied by short descriptive articles, which will be found very useful to the general practitioner for whom the book is especially written.

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*Dr. Harvey and Davidson's Syllabus of Materia Medica, revised in accordance with the British Pharmacopœia, 1898. By William Martindale, F.L.S., F.C.S. Tenth Edition, London: H. K. Lewis. 1898.

†Atlas of External Diseases of the Eye. By A. Maitland Ramsay, M.D.

The atlas is not meant to supersede clinical work, but to aid them in busy practice who have not often the opportunity of seeing ophthalmic cases, and who are thereby apt to forget the exact appearance of many eye diseases; to such we highly recommend the book and believe that it will be found invaluable.

The plates are extremely well executed and reflect the highest credit to the lithographers and publishers.

VARIA.

The third session of the International Congress of Gynæcology and Obstetrics will be held at Amsterdam, from the 8th to the 12th of August, 1899. The questions arranged for discussion are as follows:—

1. The Surgical Treatment of Fibro-Myoma.
2. The Relative Value of Antisepsis and Improved Technic for the Actual Results in Gynæcological Surgery.
3. The Influence of Posture on the Form and Dimensions of the Pelvis.
4. The Indication for Cæsarian Section Compared to that for Symphyseotomy, Craniotomy, and Premature Induction of Labour.

Among those who have consented to take part in these discussions are Messrs. Doyen, Howard Kelly, and Schauta, who will treat the first question; Messrs. Bumm, Richelot, and Lawson Tait the second; Messrs. Bonnaire, Pinzani, and Walcher the third; and Messrs. Leopold, Pinard, and Pestalozza the fourth.

The reports, with their translations in the official languages, will be sent to all the members a month before the opening of the Congress. As regards private communications, preference will be given to those bearing upon the above mentioned leading questions. Time will also be allowed sufficient for any demonstrations kindly afforded by the members.

The official languages are English, French, German, and Italian.

The subscription for membership is one guinea. Subscription forms and further particulars may be obtained from the Hon. Secretary for Great Britain and Ireland, Dr. Arthur Giles, 37, Queen Anne Street, London, W.

PUBLISHERS' DEPARTMENT.

New Inventions, Drugs, etc.

We have received from Messrs. Burroughs, Wellcome, & Co. a sample of their "Soloid of Carbolic Acid." These are extremely convenient for carriage, and each dissolved in three ounces of distilled water yields a 5 per cent. solution. The soloids are slightly tinted as a safeguard against error. The preparation appears to us as an excellent form of carbolic acid.

We have also to acknowledge the receipt of a sample of "Surgeon's Soap" from Messrs. Calvert. The preparation is a very agreeable one.

New Books, etc., Received.

From Oliver and Boyd, Edinburgh—
  Notes on Surgery for Nurses. By Joseph Bell, M.D., F.R.C.S. Edin.

From Macmillan and Co. Limited—
  Vaccination; Its Natural History and Pathology. By S. Monckton Copeman, M.A., M.D. Cantab.
  General Physiology. By Max Verworn. Translated by Frederick S. Lee, Ph.D.

From F. A. Davis Co.—
  Sajous's Annual and Analytical Cyclopædia of Practical Medicine.

From Baillière, Tindall and Cox—
  Dictionary of Medical Terms. By H. de Méric.

From John Wright and Co.—

The Thermal Waters of Bath. By Gilbert A. Bannatyne, M.D., M.R.C.P.

Physician's Book for Private Formulæ.

From H. K. Lewis.

The Treatment of Lateral Curvature of the Spine. By Bernard Roth, F.R.C.S.

Treatment in Diseases and Disorders of the Heart. By Sir Richard Douglas Powell, Bart., M.D.

From J. and A. Churchill—

Guy's Hospital Reports, Vol. liii.

We have also to acknowledge the receipt of the following Reprints :—

1. Diseases and Primary Tumours of the Thymus Gland. By H. D. Rolleston, M.D., F.R.C.P.
2. By Carl Beck, M.D.—
   - *a.* Is Appendicitis a Surgical Disease ?
   - *b.* Echinoceus of the Lungs.
   - *c.* The Technique of Closing Cæcal Fistula.
3. By Charles P. Noble, M.D.—
   - Shall Absorbable or Non-absorbable Ligatures and Sutures be employed in Hysterectomy ?
   - Closure of Vesico-Vaginal Fistula.

⁂ Authors can have reprints of articles at the following rates :—

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The Subscription to the *Birmingham Medical Review* is 6s. per annum, post free.

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THE

BIRMINGHAM MEDICAL REVIEW.

APRIL, 1899.

ORIGINAL COMMUNICATIONS.

ON THE DIAGNOSIS BETWEEN SUPRAPHRENIC AND SUBPHRENIC PYOPNEUMOTHORAX.*

BY T. SYDNEY SHORT, M.D.
VISITING PHYSICIAN TO THE INFIRMARY;
ASSISTANT PHYSICIAN TO THE GENERAL HOSPITAL, BIRMINGHAM.

To determine whether a localised collection of pus exists just above or just below the diaphragm forms a problem which may be amongst the most difficult presented for clinical study. The prognosis in one case differs so widely from that in the other that the determination of the actual position of the fluid is one of considerable moment. The decision is not an easy one; in some cases it is impossible without exploration. When air or gas is *also* present the diagnosis is generally less doubtful; but even then it presents quite sufficient difficulties. This short paper deals with the principal points in the diagnosis between fluid and air above and below the diaphragm, *i.e.*, between pyopneumothorax and, as it is somewhat inaccurately termed, subphrenic pyopneumothorax.

I propose to divide the subject into the following divisions:—
1. The diagnostic assistance afforded by (*a*) History; (*b*) Manner of onset; (*c*) Symptoms and physical signs. 2. The citation of

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* A Paper read to the Queen's College Medical Society on Feb. 25, 1899.

a case which illustrates the above points, and 3, Remarks on subphrenic abscess especially arising from perforated gastric ulcer.

1. (*a*) *Previous History of the Case.*—The history gives assistance in some cases. Thus, in the *supraphrenic* variety the commonest cause is the giving way of a portion of the pleura covering lung which is diseased; and the disease which is commonly met with as a primary cause is tubercular deposit. So that a previous history of cough with hæmoptysis and night sweats will point to the mischief arising above the diaphragm. Wounds of the chest may be a cause, either by direct puncture or by damage to the lung from broken ribs; other less common causes are empyema opening into the lung, gangrene of the lung, pyæmic abscess or an abscess of some neighbouring structure such as the spine or the mediastinum opening into the lung substance. In each of these cases there would probably be a distinctive history.

The *subphrenic* variety is commonly due to the perforation of a gastric ulcer or is secondary to a hepatic abscess. In the former cases we generally find a history of previous dyspepsia with probably severe pain soon after food, and possibly a history of hæmatemesis. In not a few cases however previous history of dyspeptic troubles is quite absent, or, if present, not of such magnitude as to have attracted the attention of the patient. The perforation of a duodenal ulcer may also be a cause. The inflammation and ulceration produced by the presence of gall-stones either in the gall bladder or in the ducts may bring about the formation of an abscess and the pus may find its way beneath the diaphragm. In a case which I saw lately with Dr. Vince, of Winson Green, a collection of pus had occurred below the diaphragm on the left side, and could be detected as an elastic tumour beneath the edge of the ribs in close proximity to the kidney. The patient was a man aged fifty-seven, who had had several attacks of colic with jaundice extending over a period of five years. The history of the case and the whole condition of the patient pointed to malignant disease arising in the biliary passages, followed by abscess below the diaphragm on the left side. An examination was made of this case after death, and it was found that this was precisely what had occurred.

Cancer of the stomach and an abscess of the liver bursting into the peritoneal space between the liver and the diaphragm must also be remembered. If the subphrenic abscess be on the right side, suppurating hydatid or abscess of the liver must be especially thought ot.

As less common causes I may mention appendicitis and perinephritic abscess. In both these cases the pus may find its way, eventually, to a position immediately below the diaphragm.

I have not space here to go into the history that would be likely to be elicited in each of such cases; but it will be seen that the account a patient can give of his previous illness, if such exist, will help in determining whether the original cause was above or below the diaphragm.

b. Onset of the attack.—If the onset is gradual it resolves itself into part of the previous history. If sudden, the symptoms supervene either upon a previous period of ill health, such as may have been experienced from any of the causes above mentioned, or they may arise in a person otherwise in good health. In this case the diagnosis, as a rule, may be taken to lie between pneumothorax, from early phthisis, on the one hand, and a perforated gastric ulcer, or hepatic abscess on the other. In the case which I shall presently relate, it will be seen that even in the event of a perforating gastric ulcer, the previous history may be of little assistance, and that the sudden onset may really be the first sign of illness. In pneumothorax we should expect a sudden stabbing pain in the affected side, with severe fit of coughing, a feeling of faintness with great dyspnœa and possibly vomiting. In perforated gastric ulcer, sudden acute pain is felt in the epigastrium, which remains acutely tender. Vomiting is nearly always present and is more common than in pneumothorax. The dyspnœa and feeling of faintness are present here also. It cannot fail to be noticed that there is a marked similarity between the onsets in the two classes of cases.

c. Physical Signs and Symptoms.—When we come to examine the patient the main point to be determined is this—what is the position of the diaphragm? This is not an easy matter, because the level of the diaphragm cannot be actually demonstrated and must be judged from the position of neighbouring organs, the two most important being the liver and the heart. First of all it must be remembered that we shall not be likely to come across two cases exactly alike. Each case has its own peculiar signs. The variation between cases is due (*a*) to the differences which may exist in the amount of pus or air, (*b*) to the presence or absence of adhesions curtailing the movability of organs, and (*c*) to the actual variations in size and shape of particular organs, *e.g*, a liver which is enlarged, or has an abnormally large left or right lobe, might be mistaken for a normal liver somewhat displaced.

In right sided lesions, if the mischief be above the diaphragm, we should expect to get the liver pushed down and the heart driven over to the left. The dulness elicited in percussion over these organs would not be separated by any resonant area. If the mischief be subphrenic, the liver may or may not be depressed according to the amount of pus and air present. Since the right wing of the diaphragm is raised, the right border of the heart would be raised and it would be quite possible to get some resonance between the heart and the liver to the right of the middle line. I would point out here that very frequently the resonant note in these cases is "conveyed" over more solid organs, which appear to act as pleximeters. If such be the case, the outlines of heart and liver may be very considerably obscured.

In left-sided lesions, if the mischief be above the diaphragm, the heart is pushed to the right, and the normal area of cardiac dulness becomes resonant. Theoretically the spleen and the left lobe of the liver should be pushed down, and occasionally they may be felt in a depressed position. In left-sided subphrenic cases the heart is raised, but it is not pushed over to the right unless fluid is also present above the diaphragm, a complication, however, which is not unusual. Theoretically the liver and spleen should be depressed, but in the generality of cases their position is obscured and fails to render assistance. (Diagrams were shown illustrating the positions of the organs under the above conditions.)

In all cases the presence or absence of movement in the diaphragm is of great importance. Mischief above the muscle usually depresses it, so that it fails to act. Mischief below may raise it, but at the same time increase the mechanical advantage at which it acts, and the movement continues and can be recognised by its effect upon the abdominal walls and their contents.

Cases of subphrenic trouble are considerably complicated by the presence of fluid in the pleural cavity, that is, above the diaphragm as well. The following is an example of a case in which this complication existed :—

2. *The Case of Jane W* * * * .—Jane W., æt. 16,* a pale looking but fully developed girl, was admitted August 17 of last year complaining of pain over the region of the stomach, across the lower ribs and in the left flank. This pain had come on suddenly 14 days before admission, just after her supper, and was accompanied by vomiting. The pain was very severe for several hours, and then became somewhat less, persisting in this form. She did not vomit again.

It appeared that she had suffered for three years from indigestion, following an attack of scarlet fever, with pain shortly after food. She had never been subject to vomiting her food, and had never brought up any blood. The account she gave was consistent with slight dyspepsia, and was not severe enough to suggest ulcer of the stomach.

When seen shortly after admission she was dyspnœic and looked distressed. The temperature was up, 103°, the P. quick, 114, and the R. 32. The tongue was somewhat dry and slightly furred down the centre. The belly was full, the left side moved less than the right. The whole of the left hypochondriac region was tender, but not excessively so. An ill-defined tumour could be made out between the edge of the ribs and the umbilicus, but not reaching quite so far as the latter. It gave a marked feeling of elastic resistance, and could be palpated bimanually with one hand in front and the other placed in the loin behind. It was dull to percussion all over, and the dulness extended upwards over the lower ribs. The heart was pushed upwards, and a little to the right, the upper level of the cardiac dulness reaching the third rib. The most marked point of pulsation was in the third space, about one inch from the left edge of the sternum. (See Fig. 1.)

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* This patient was admitted when I was doing duty for Dr. Simon, and I am indebted to his kindness and courtesy for permission to make use of the hospital notes.

Between the heart and the abdominal tumour above described there was full resonance extending outwards from the middle line to the posterior border of the axilla, tympanitic at the lower part where it joined (but was not clearly differentiated from) the stomach resonance. The stomach resonance was displaced to the right. The edge of the liver dulness was obscured by the resonant area, so that on the left of the middle line it could not be made out, but on the right it could be made out and appeared normal.

At the back of the chest (see Fig. 2) the percussion note was normal over the apical area. At the middle of the scapula horizontally it became deficient, and passing through actual dulness was quite flat at the extreme base for about three fingers' breadth. The absolute dulness of note extended below the edge of the ribs for about one inch. This deficiency in resonance at the back did not occupy the whole posterior area of the chest, but was limited outwardly at the posterior axillary line, where it met the area of tympanitic resonance already described.

In placing the patient recumbent the lower axillary region became dull, showing that both air and fluid were present, and this was emphasised by the marked succussion splash which was heard in shaking the patient.

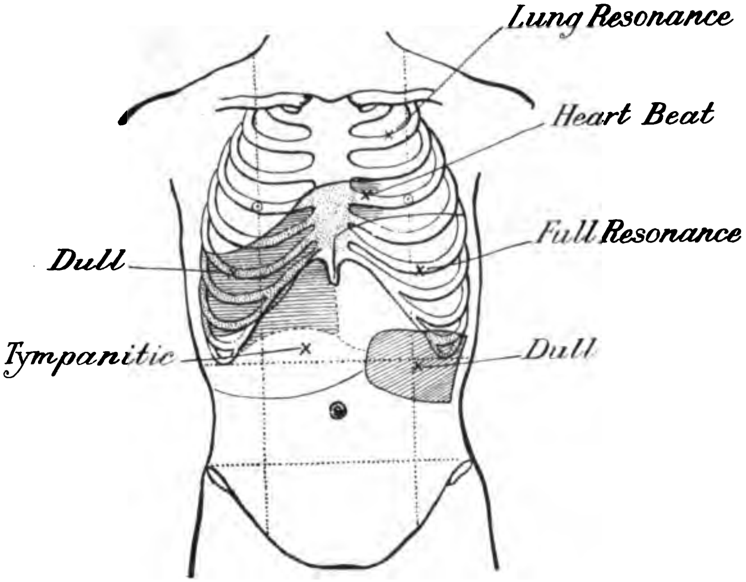

Fig 1. Case of J.W. (Front).

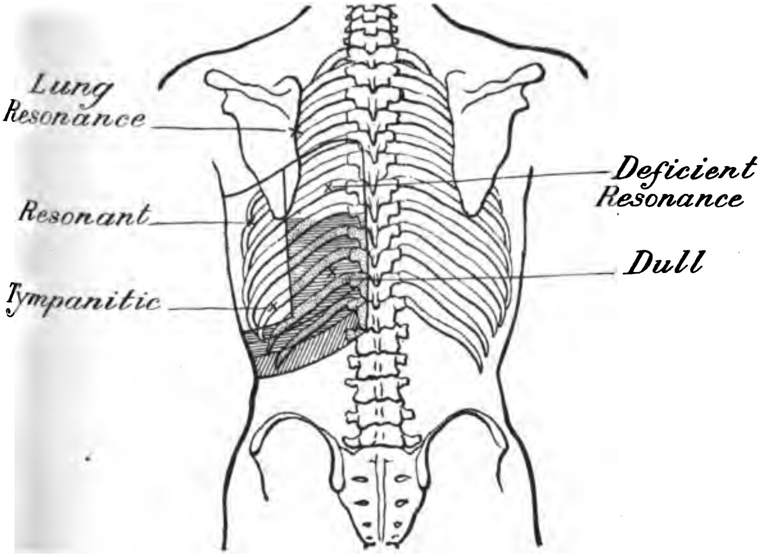

Fig 2. Case of J.W. (Back).

The breath sounds over the front of the left side were good and normal down to the seventh rib, but weak and distant in the lower axillary region.

At the back they became weak as the percussion note lost its resonance, and at the base were quite absent. The right side of the chest appeared quite normal.

These physical signs pointed to the presence of fluid below the diaphragm occupying the position which would be taken by fluid in the lesser peritoneal cavity. The tumour in the left hypochondriac region, with the dulness at the left base behind extending into the loin and not limited by the edge of the ribs, made this practically certain. That there was also air present in addition to the fluid, the movement of the dulness in altering the position of the patient and the presence of the succussion splash abundantly testified. Up to the present the dulness and weak breath sounds extending so far up the chest had not been explained. Those additional signs pointed to fluid in the pleural cavity also, because they are not necessarily present when there is fluid and air in the subphrenic position.

Shortly after admission she developed an irritable cough and occasionally brought up a little foul-smelling sputum.

I asked Mr. Gamgee to see the case with me, and it was decided in the face of the great distress to find out whether serum or pus was present above the diaphragm before carrying out any operative measures. Accordingly on the 21st a needle was introduced through the eighth space in the posterior axillary line and foul pus was withdrawn. An incision was now rapidly made, but only serum was evacuated. This complicated matters considerably, because it was evident that either there existed pus and serum in separate compartments in the pleural cavity, or that the needle had gone through both layers of the pleura and the diaphragm and had tapped the pus below. There was also the possibility of the original diagnosis being wrong, and that a localised pyopneumothorax was present above the diaphragm, and that in addition there was a collection of clear serum above it, but also in the pleural cavity.

Although this did not appear probable, some colour was lent to it by the complete disappearance of the abdominal tumour about this time, and absence of all abdominal tenderness. The girl's condition precluded the administration of an anæsthetic if it could possibly be avoided, so I decided to have a free opening made wherever pus was found. Accordingly, the needle having withdrawn pus from the tenth space, an opening was made here and about a pint of pus was evacuated.

For a fortnight her temperature remained irregular, varying from normal to 102° or 103°, and she only made way very slowly. Her cough, dyspnœa, and general condition were, however, much relieved. During the third week her temperature kept more steady, about the normal, and she was sent to the Jaffray Convalescent Branch. For six weeks she kept fairly well, being able to go out into the garden and walk about without any distress. The lower wound healed completely, but the upper one remained open, so that the case became practically one of empyema, with every prospect of a satisfactory recovery.

On October 26th, after six weeks, she had a sudden sharp pain in the right (opposite) side, with intense lividity and dyspnœa. Acute pleuro-pneumonia developed, and she died in a few days.

At the autopsy an ulcer in the posterior wall of the stomach was found firmly adherent to the spleen. The lesser peritoneal sac had been an abscess cavity, which had healed. Between the stomach, liver, and diaphragm there was a mass of intricate adhesions with numerous grooves and loculi. On separating these a small collection of inspissated pus was found near the œsophageal end of the stomach. The left pleura was adherent all over except for the small cavity which had been tapped at the first incision and had remained open since. Mr. Sedgewick, who performed the *post mortem* examination, was of opinion, from the condition of the spleen and the lungs, that the final pleuro-pneumonia was septic in origin.

Remarks on the Case of Jane W.—There are two points in this case to which I should like to draw special attention. The first is the presence of the elastic tumour which was felt in the left hypochondriac region during an early period of the case. This pointed to fluid in the lesser peritoneal cavity, and is one of the signs met with on which special stress is laid in the diagnosis of this condition. It is interesting to note that this tumour was not present after the case had been under notice a few days.

This point was well shown in a woman who came to my out-patient clinique in 95, of whose case I have full notes. She was about 35 years of age, and said that four months before I saw her she was standing washing clothes when she felt a "sudden pain in her bowels going round to her back." She was sick and had to go at once to bed. The pain and sickness remained all day. For ten weeks she kept her bed, being continually in pain and vomiting nearly every day. Her belly then was noticed to swell and she felt a lump in the left side accompanied by a feeling of heaviness. At the end of the ten weeks she seemed to improve and was able to get about again, but at intervals she had bouts of sickness. When I saw her she had a tense tumour occupying the umbilical, left hypochondriac, and part of the left lumbar region. It was dull on percussion, and felt like tense pent-up fluid. It was separated from the hepatic and cardiac dulnesses by a band of high pitched resonance. The left loin at the back was dull, as was also the lower part of the chest on the left side as high as the ninth rib in the scapular line.

This was a case of fluid occupying the space which would be filled by distension of the lesser peritoneal sac. She was transferred to the surgeon, the cavity was drained, and she made a good recovery.

When fluid is present in this cavity, as in the cases of so-called pancreatic cyst, the size of the tumour present may vary, and the alteration is evidently brought about by the condition of the surrounding organs, such as the stomach, and the amount of distension of the transverse colon and other portions of the bowel. The rounded fulness of this tumour and its superficial feel suggest that it is especially produced by the fluid gravitating between the layers of the omentum and forming a kind of bag palpable between the left costal edge and the umbilicus. It is not difficult to imagine that a full stomach and colon, especially the latter, might press on the omentum and empty the fluid back into the more general cavity of the lesser peritoneum.

The second point to which I would draw attention is the presence of clear serum in the left pleural cavity. Now when pus has been found in these cases and the doubt still remains as to whether it is above or below the diaphragm, the associated presence of serum in the pleural cavity suggests strongly that the pus is outside that cavity. It is more likely that the serum would remain serum when separated from the pus by a partition like the diaphragm than by one formed of a false membrane stretched across between two layers of pleura. It is not impossible to have a localised empyema and a localised serous effusion on one and the same side separated by a false membrane, but it is a rare condition. It would be even less common to find the partition quite horizontal, as it is in cases where a diagnosis has to be made between pus above and pus below the diaphragm. Serum then found in the pleural cavity with pus in the vicinity, or even sweet pus in the pleural cavity and foul pus in the vicinity, points in each case to the latter having a subphrenic origin.

3. *Remarks on Perforating Gastric Ulcer causing Subphrenic Abscess.*—When pyopneumothorax occurs on the left side the commonest cause is perforation of a gastric ulcer. This condition is so dangerous, being nearly always fatal, that all cases of gastric ulcer must be looked upon as within a measurable distance of death. I believe that tight lacing is one of the principal factors in the causation of perforation. Cases of gastric ulcer are so common and their recovery in hospital is so uniform, that there must be some special reason why cases not in hospital so frequently perforate. The reason is most probably the pressure to which the stomach is subjected by the corset. If perforation occur, the best treatment we know at

present is to have the abdomen opened. It is not always easy, however, to say immediately whether the ulcer has perforated or not. The signs and symptoms which are of the most value are these. (1) Violent pain over the stomach coming on quite suddenly. (2) Vomiting, which may be either little or much. (3) Shortness of breath. (4). Small rapid pulse. (4) General signs of distress, such as we get in early peritonitis.

In a case I saw a short time ago a girl was brought into the hospital having been picked up in a railway carriage vomiting blood. She had great pain over the stomachic region, and the question was, had she a perforated ulcer or not? The pulse was quite normal, only 80, steady, and of good quality. The girl lay quite quiet, without dyspnœa, and was not especially distressed. She was extremely tender to any examination over the region of the stomach, this pain being much greater than in ordinary cases of gastric ulcer. In spite of this, considering the mildness of the general condition, I decided that perforation had not occurred. Within a short time she vomited some more blood, and the case went on as an ordinary gastric ulcer. Should perforation occur, and the belly not be opened, what is the usual course of events? If no adhesions occur, and general acute peritonitis ensues, the case becomes practically one of that condition. If sufficient adhesions are present, or soon form, to shut off the contents of the stomach from the general peritoneal cavity, the inflammation is penned up, and a subphrenic abscess results. Air is generally present as well. If this is above and in front of the stomach, the pus is between the diaphragm above and the stomach and liver below; if it is below and behind the stomach, the pus is in some part of the sac of the lesser peritoneum, and the signs may differ considerably from those where it is not in this sac at all. In either of these cases the general condition of the patient may improve. The pain diminishes, there is less distension, and the appetite may even return, and the general and local symptoms of peritonitis diminish. But the patient remains weak, the temperature is raised and may become hectic in type, and the pulse is quick. These signs would suggest a careful and thorough examination with a view to the finding out whether pus was present, and, if so, where it was located. The main object of this clinical paper has been to show how this can be determined.

INTRODUCTION TO A DISCUSSION ON THE TREATMENT OF TUBERCULOSIS.*

BY DR. LIONEL STRETTON.

THE formation of the National Association for the Prevention of Consumption and other forms of Tuberculosis, and the great interest which has been manifested in it throughout the length and breadth of the land has brought the subject of the treatment of Tubercular disease into such prominence that all of us must have given some attention to the matter. At such a juncture I felt that it might be useful to have a discussion on the subject, and I have therefore ventured to amplify a letter which I wrote to the *Lancet* as an introduction.

For purposes of discussion I will divide the question into 1, Treatment in general; 2, Preventive treatment. The general treatment will of course vary according to the organs affected, but that which chiefly concerns us is the treatment which applies to all situations—what I venture to term the curative treatment.

Before discussing this, if we accept the doctrine, it is desirable that there should be a definition of what constitutes a cure. I must admit that I have been very sceptical as to such a possibility. The most satisfactory, perhaps, are those cases of Tubercular Peritonitis which call for surgical interference. I have operated upon six of them, five have died since the operation was performed, and in neither of them was there any evidence that the disease was eradicated, although temporary benefit certainly followed in each instance. The sixth, however, so conclusively proves the possibility of cure that I cannot do other than accept it.

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* Read before the Kidderminster Medical Society on Friday, 27th January, 1899.

W. B., age 28, was operated upon in May, 1893. The whole of his peritoneum was studded with miliary tubercle, which I think sufficiently guarantees the diagnosis. Since he left the hospital he has been able to resume his occupation as a butcher, all his symptoms have disappeared, he has gained in weight, and there is not the slightest evidence of any disease about him. He is here this evening in order that you may verify my opinion on this point.

I know of many instances in which persons are reputed to have been cured, but so far as I can ascertain, there is no evidence that they really suffered from tubercle.

We are aware of the difficulties of diagnosis, and we know how even the most eminent members of our profession make mistakes from clinical examinations. Ocular inspection is far more satisfactory, but to be quite certain, bacteriological proof is desirable. The cost of this has been an impediment, but if Sanitary Authorities will follow the excellent example of Malvern, this will soon be removed.

We ought not to be satisfied about a cure because the clinical symptoms subside. Is it not possible for the acute process to cease, and for bacilli to be left, which may at any time start into activity? The course of the disease indicates the possibility of such an occurrence. In defining a cure, I think, we ought to insist that, in addition to the subsidence of the clinical symptoms and the inability to discover bacilli, there should be a prolonged interval, at least three years, with occasional examinations to verify it.

A cure may be effected either by destroying the microbes, or by so altering the body that they cannot continue to exist there. Many attempts have been made, but nothing, so far as I am aware, has proved satisfactory. The nearest approach, in my estimation, was the discovery of Koch, but its premature disclosure, unwillingly forced from him, and the hurried mission to Berlin, created such large expectations that disappointment was bound to follow.

In treatment, as in many other matters in our profession, we are largely influenced by fashion. At one time Galen pronounced vinegar the best preventive to consumption. At another, Dessault and others asserted that consumption is often brought on by a common practice of young people taking vinegar to prevent obesity. To-day the consumptive must seek salvation by living in the open air and swallowing large quantities of creasote to the verge of poisoning. All of us admit that a plentiful supply of fresh air is antagonistic to the life of bacilli, but whether it is necessary for these patients to live out of doors is another question. In the cases in which I have tried it I have not been much encouraged, and I am sure that in some it would be absolutely harmful. I do not think it should be adopted on such a large scale as the fashion indicates, and while admitting that it may be useful in specially selected cases, properly safeguarded, I am of opinion that, if free ventilation is adopted and a suitable situation selected for residence, the out-door treatment is not essential.

Creasote I have been using for the past year, and have pushed it to the fullest extent, usually commencing with ♏ i ter die, and increasing by ♏ i each day up to 60. In private, with one exception, I have found it impossible to get the treatment carried out, but in my hospital cases it has been thoroughly adhered to.

Of the various methods of administering it I think the best is to give the drops in a small quantity of milk. I have tried cod liver oil, but this occasions nausea in many patients ; water does not mask the hot feeling when swallowing, and the same applies to sugar and syrup. Capsules are easily taken by most people, but it either means swallowing them in large numbers or having them supplied in different sizes for each day, which would be inconvenient, and patients inform me that the taste from them when they burst in the stomach is quite as disagreeable as taking the crude drug.

The following are examples of cases:—

Hospital Cases.—R. S., age 23. She had suffered from hip disease, probably tubercular, for 15 years, and had on several occasions been an in-patient for two or three months. On admission there was 4 in. shortening and lately some pain. T. 99·8°. Rest in bed and extension of the limb were continued for two months without much improvement. She was then put on creasote in ol. morrh., and the dose increased ♏i each day until ♏26. During the time she was taking the creasote she became gradually weaker and suffered from occasional vomiting, which became so pronounced that we had to stop. Symptoms of tubercular meningitis became manifest, and she died a fortnight later. *Post mortem* confirmed diagnosis of tubercular meningitis.

M. D., 10 years, admitted with tubercular glands in neck, probably tubercular peritonitis. After being treated for a month with oil and iron, &c, she was put on creasote and ol., and increased to ♏33; then vomiting; no gain of weight, no improvement.

W. S., age 26. *φθ* patch of crepit. rt. posterior near angle of scapula; no bacter. examin., but loss of flesh, night sweats, &c.; creasote ♏i in ol. morrh. to ♏60 for a week; then sick, omitted for a week; still taking ʒi ter die. All physical signs gone, and he is apparently well, and here for exhibition.

H. T., age 20. Incipient tubercular disease of ankle joint; ♏1 to 28 in ol. during rest in bed, and Scott's dressing P.P.; then out six weeks, then in ♏1 to 26, then out again; gained weight, and local disease subsided. Continued ♏10 as O.P.; ankle looks normal.

Private.—J. T., age 31, had a pleural effusion for which she was operated upon seven years ago, and she has suffered from phthisis ever since. She has spent a large amount of her time at the seaside, and has continually taken cod-liver oil, quinine and iron. For four years she took capsules of creasote three or four times a day—about 3 to 6♏ a day. During the past twelve months she has been constantly under observation, with slowly progressive disease affecting the major part of the left lung and the right apex. There have been occasional attacks of diarrhœa, suggesting tubercular enteritis. She would not submit to the open air treatment in its entirety, but for the greater part of the summer she lay out of doors, and her bed room, which is airy, has a large luffer ventilator which supplies a constant stream of fresh air and which has never been closed. About six months ago she commenced to take the creasote more resolutely, commencing with ♏1 ter. die she increased it by a ♏1 a day, until she attained a 53♏ dose ter. die, it then had to be stopped for a couple of weeks on account of nausea, she recommenced with ♏2 and increased ♏2 a day to 28, when another stoppage had to take place; after a week's rest she began again, ♏2 and continues.

She has also been taking cod-liver oil, maltine and iron.

This case seemed to be a particularly favourable one, the girl was so intelligent and so desirous of carrying out the remedy, and the disease was not too far advanced *to despair* of improvement. She was well able to take the other treatment and ample nourishment so that the creasote had a fair chance. In spite of this the disease has steadily progressed, and so far as I have been able to ascertain there has been no amelioration in her symptoms.

I have prescribed the treatment in several other cases.

E. H., age 21, with *φθ* affecting both lungs, took about 200 capsules of ♏1 each, but not with regularity because they repeated. He absolutely refused to take the crude drug, and although he lived in the open air he rapidly got worse and died.

F. T., with incipient disease in one lung, after one day refused to continue because of the smell.

Mrs. F., with incipient mischief, refused after one day.

I mention these refusals because it is a distinct factor against the treatment, and no doubt many would rather die than be made into a scent bottle, as they think to annoy their friends, and to have the constant vicious taste. In order to ascertain the exact condition, I took some myself for three days, and I certainly found it exceedingly objectionable. The taste rises above everything, and you must be satisfied to taste and smell nothing else. I can also bear out the statement that it is quite as bad in capsules. Of course people vary in their susceptibilities, and though I do not say I should prefer the disease to the cure, I can quite understand that many people would, and when we cannot assure them of success, there is little wonder that they will not be persuaded to carry it out.

Many other chemical substances have been used with the idea of killing bacilli, but I have not found them effectual. Treatment by the **X** rays has not been practised to any extent, though some reports are favourable.

My own view favours the idea of so altering the condition of the body that the microbes can no longer exist there In this opinion I am influenced by the consideration that the majority of us, though surely exposed to the infection, are not affected with the disease. This immunity, I take it, is owing to the fact that the bacilli find themselves unable to thrive and multiply in our bodies. What the condition actually is which favours their growth or how it is produced we do not exactly know, but certain gross characteristics are already recognised as predisposing, and any curative treatment must be directed towards restoring such a body to a normal condition. The surgeon's knife or the poisoning of microbes would seldom be effectual unless accompanied by such assistance as would restore a natural state of bodily health. What then is this elixir we are seeking for? Personally I must admit that I have not found it. The fashions have all proved failures, and to day we cannot do more than depend upon fresh air, good hygiene, and the regular and judicious administration of cod-liver oil and iron in its various forms. I do not say that these means are entirely satisfactory, far from it; but I do believe that it makes the patient's body a more unpleasant breeding ground for the bacilli, and I feel confident that it prolongs life in many cases. How it does this I do not know; a relic of empiricism, perhaps, but none the less valuable to the patient on that account.

It would be beyond the scope of this communication to discuss the detail treatment and that of the various complications which are likely to arise.

Preventive Treatment.—While we are unable to conduct the investigations which tend to the discovery of a curative agent, we have many opportunities of instructing the public upon the advantages, I might say the necessity, of taking precautions to prevent the spread of the disease.

It is not necessary in an assembly such as this to insist upon its infectious nature. It is established beyond question, and though there may be differences of opinion as to how it is introduced into the body, we all know that it is the tubercle bacillus of Koch which produces the disease.

Preventive treatment should aim at—(1) destroying bacilli, (2) preventing their entrance into the body, (3) rendering the body immune.

1. *To Destroy the Bacilli.*—The subjects of tubercular disease must be taught the necessity of destroying the sputum and other discharges in which they are contained. When it is estimated that there may be as many as two million bacilli in a single expectoration, the paramount importance of carrying this out to the fullest extent becomes obvious. The best means of accomplishing it is to receive the expectoration in a small cardboard box half filled with sawdust which has been saturated with paraffin, and this should be burnt at intervals during the day. If the patient is walking about such a receptacle may be carried in a tin box and burnt as occasion requires. Discharges should be soaked up in antiseptic absorbent dressings, which must be burnt immediately they are removed. After death the apartments should be properly fumigated, and especially is this necessary in lodging houses and hotels. The cremation of the body is the surest method of destroying the large number of microbes it contains.

"*Consumption as an Infection.*—Dr. Guerard, the special expert appointed by the New York Legislature to examine into the spread of tuberculosis in New York City, has made a startling report, showing the communicability of the disease in what corresponds to the Whitechapel district in London. Of 663 houses there were 248 in which consumption was found, there being in three years 541 cases. Many of these houses had had cases every year for three consecutive years. Dr. Guerard's conclusion is that houses badly infected should be torn down to prevent the spread of the disease. In the entire city during the past five years nearly 23 per cent. of all the houses had inmates who died from tuberculosis. These statistics have created somewhat of a sensation."

I am not prepared at present to accept the conclusion of Dr. Guerard "that houses badly infected should be torn down to prevent the spread of the disease."

2. *To Prevent the Entrance of Bacilli into the Body.*—The chief way in which the microbes find entrance into the body appears to be by inhalation and with food. We are informed that as the expectoration becomes dried the bacilli are blown about in the air, and that there is no danger of contracting the disease from the expired air of consumptives. Without challenging the accuracy of this statement I venture to think that, for the present at any rate, it is more prudent not to accept it entirely, and to warn people to avoid inhaling such air. They should not occupy the same apartments for any lengthy time, such as sleeping at night; they should always keep a good distance from the sufferers, and be careful to have an ample supply of fresh air. It is also advisable to impregnate the atmosphere with some antiseptic, and the wearing of a respirator charged with a bactericide is to be recommended.

With regard to food we are told that the chief danger is from milk, that cows are peculiarly liable to the disease, and that this is the means of infecting large numbers of children. It may be so. I fully agree with the necessity of the periodical examination of cows. All infected animals should be destroyed and their carcases cremated at the expense of the State. Local

Authorities should have milk examined for bacilli as well as for water, and the general public should be warned to boil all doubtful supplies. A recent investigation at Cambridge has proved the presence of tubercle bacilli in eight out of sixteen samples of milk examined, and the absence of them in the other samples is no proof that there are no tuberculous cows contributing to the supplies. This result in itself appears sufficient to demand the systematic examination, not only of the milk, but also of the cows which furnish it, and it emphasizes the importance of sterilizing all supplies until proper safeguards are adopted. But it is not from milk alone that infection may occur. All our food supplies require supervision, as I have endeavoured to show in the annexed letter written to the *Lancet.*

THE ANTI-TUBERCLE CRUSADE.

To the Editors of THE LANCET.

SIRS—In a book written by Gideon Harvey, M.D., about 1660, consumption is described as an endemic and epidemic disease, and the following passage gives some idea of the then prevalent belief in its infective nature: "And considering with all its malignity and contagious nature, it may be numbered among the worst Epidemicks or popular diseases, since next to the Plague, Pox, and Leprosie, it yields to none in point of contagion; for it's no rare observation here in England, to see a fresh coloured lusty young man yoake to a consumptive female, and him soon after attending her to her grave. Moreover nothing we find taints sound lungs sooner, than inspiring or drawing in the breath of putrid ulcered consumptive lungs; many having fallen into consumptions, only by smelling the breath or spittle of Consumptives, others by drinking after them; and what is more, by wearing the Cloaths of Consumptives, though two years after they were left off."

With the exception of the last sentence this opinion so nearly accords with the views of to-day that it is difficult to understand why it remained in abeyance for so many years. Of course it was not founded upon a scientific basis and, I suppose, as we became more exact we were unable to accept the clinical facts unless supported by experimental proof. Thanks to the discovery of Koch we are now emerging from the path of error into which we had temporarily strayed, and in doing so I think we must admit that we should have been wiser, or at any rate conferred more benefit on mankind, if we had accepted the teachings of our predecessors who, if they had not the advantage of so much scientific knowledge to assist them, evidently possessed considerable clinical acumen and were able to make accurate deductions therefrom. There are, of course, errors in Gideon Harvey's book, but who can say that some of the statements are not in advance of even our boasted knowledge of to-day? As an instance we may take the reference to cancer as infective. Although we are still disinclined to accept it the disease affords us indications which support the view that it is to some extent communicable. The great factor which upsets all our calculations is the individual peculiarity which favours the development of a disease, and it is because we are unable to solve this problem that we must use every means in our power to prevent the products of infection being brought into contact with any member of the community.

A society has been established for this purpose the members of which intend to propagate information which will enable the laity in some measure to assist in the endeavour to control the disease. An eminent member of the profession has delivered a discourse on this subject wherein he chiefly lays stress on the danger of drinking milk and indicates the necessary means of avoiding this danger. He also recommends asses' milk as superior because less likely to be infected with tubercle. In this connexion it is interesting to note that Gideon Harvey had noticed this although he did not know the reason. Writing on the subject he says, "Asses' milk is universally preferred." and he goes on to give directions as to the diet of the ass—a matter which may or may not be of importance. In speaking of the treatment he is also very strong on the question of fresh air and change of air, and also advocates change of food. "Neither it's only the change of air that proves so soveraing to Consumptives, but the change of Bread, Beer, Flesh, Company, and other circumstances do veiy much conduce thereunto." It is necessary to consider this question not only in the treatment, but also as a preventive, and although we are often met with the remark, "Oh! if I listen to you it is not safe to eat anything," it is nevertheless our duty to warn the public and teach them how to avoid disease. All authorities seem to be agreed upon the importance of safeguarding our food supplies, but although most elaborate precautions are taken for this purpose one of the prime sources of danger, at any rate as regards tubercle, is ignored.

Take, for instance, the inspection of bakehouses which is carried out in a fairly thorough fashion. The drains, the structure, &c, and all the appliances must be kept in a sanitary condition—*i.e.*, in such a condition that germs will not be likely to flourish about them—but no notice is taken of the attendants, one or more of whom may be and often is suffering from phthisis, his body full of dangerous germs which are constantly fouling the atmosphere; the expectoration finds a rapid drying-ground and a temperature favourable to the life of bacilli, while the crevices in the already baked bread and other foodstuffs form a ready nidus for their reception and propagation. In these days, when hardly any bread is made in the homes, it is a question whether there is not even more danger from bread than from milk, for it is well known that phthisis is a prevalent disease amongst bakers. True, I have not got the scientific proof of my assertion, and I might examine many loaves before I found tubercle bacilli. Many samples of milk might be examined with a negative result, but given the presence of tubercle bacilli in a bakehouse—and I suppose few would deny their existence there if the baker was suffering from phthisis—I do not think it is necessary to resort to scientific experiment to prove the danger. When phthisical subjects are being solemnly enjoined to carry receptacles for their sputum in order to avoid the danger of infecting the atmosphere of our towns, surely there is no difficulty in realising the far greater risks in a bakehouse. Again, if it is necessary to rigidly supervise the sanitary conditions in order to ensure an atmosphere where food may be produced without fear of its being infected, surely it is approaching well nigh the ridiculous to permit an infected individual to be there present, to prepare the food, to handle it when prepared, to foul it with his exhalations, and to deposit the products of his disease in and about the building. In the flour mill too phthisical workmen will often be found, and though the process of baking will perhaps sterilise the flour it is used for many other culinary purposes which may not.

Although I give the first place to bread my remarks apply to all consumable stores. If it is necessary to inspect the slaughter-house and to examine the meat, why except the butcher? Cooking should kill tubercle bacilli, but so should it destroy the eggs of the tape-worm, and yet in spite of this we annually extract many yards of this disagreeable denizen from the intestines which no doubt have been introduced in the same way as much of the tuberculous mischief finds entrance to our bodies. If ham, cheese, and butter require examination, why allow them to be retailed by a phthisical shopman? In like manner I might pass in review all articles of diet. I might even enter the sacred precincts of the domestic household and question the bodily condition of the cook and those who carry the food to the ultimate consumers. The position of safeguarding the food-supply and ignoring the condition of those who handle it seems to me a very untenable one and demands the immediate attention of those who are constituted the guardians of the public health. Will it take us as long to insist on the remedy as it has taken us to accept the fact of the infectious nature of tuberculous disease? Without expressing any disbelief in the views of Sir Richard Thorne and yourselves as expressed in your leading article of Dec. 3rd, I venture to assert that the question I now raise is a point in favour of including phthisis among the dangerous infectious diseases which are compulsorily notifiable to sanitary authorities. I do not say that it proves the necessity of such an inclusion, but it does make for the necessity of investing all sanitary authorities with the power of inspecting not only the premises and the food, but also the bodies of those persons who are occupied with the food. This inspection should be no superficial formality, but a rigid and thorough examination carried out at regular intervals.

In the meantime, at the expense of being called an alarmist, I would commend to the serious consideration of all thoughtful men the question of their food-supply. Do not be satisfied with boiling your milk; try to secure servants free from tuberculous disease and be particularly careful about your bread.

I am, Sirs, yours faithfully,

J. LIONEL STRETTON.

Kidderminster, Dec. 5th, 1898.

3. *To render the Body Immune.*—I have already referred to the fact that some are more prone to develope the disease, some present clinical peculiarities which may be recognised, some, on the other hand, fall easy victims without exhibiting any marked peculiarity. It behoves us, therefore, to render all bodies immune. Whether this will ever be accomplished, and by what means, is more than we can tell. The wonderful strides in bacteriology and the protective influence of animal serums, lead us to hope for salvation from that direction. If it does come let us hope that our future legislators will not render it inoperative by pandering to the whims of agitators.

It seems almost impossible to secure a thorough method of prophylaxis. There are so many side issues, so many vested interests, so many outside influences, and so many curious people, that the possibility of legislation is very remote. Perhaps some day we may obtain a State Medical Department, and the opinion of the profession upon matters medical will become paramount.

In the meantime we can only persist in our efforts to educate the public in the necessity of safeguarding their health. In this category I consider it is wise to get to the root of the evil and point out all sources of danger, and I do not believe that the positive assertions of those in high places are calculated to effect much good. They are credulously swallowed by the general public, their meaning is often misunderstood—it is common now to hear people say, O! if I boil the milk there is no fear of consumption—they cause other matters, perhaps, equally or more important to fall into the background, and if they have to be revised or withdrawn in the future, they bring discredit not only upon those who voice them, but upon the profession as a whole.

There have been a large number of meetings held in the various parts of the country, and at most of them, resolutions have been passed drawing the attention of the Sanitary Authority to the importance of controlling the spread of tubercular disease. I think we shall be serving the interests of our own community if we adopt a similar course this evening.

THE SPASTIC PARALYSES OF CHILDREN.*

BY WALTER R. JORDAN, M.D.,
ASSISTANT PHYSICIAN, CHILDREN'S HOSPITAL, BIRMINGHAM.

THE form of paralysis which has arrogated to itself the name of "Infantile" is now one of the commonplaces of clinical medicine. It has an acute onset, with more or less feverishness and general disturbance, a period of subsidence and more or less complete recovery, and a residue of irredeemable paralysis, of which the characteristic features are wasting, flaccidity, alteration of electrical reactions, and diminution or loss of reflexes. Moreover, a single morbid histological lesion is associated with it, though as to the cause of this and the general pathology of the disease there is room for much difference of opinion.

In striking contrast is the clinical group on which I make a few remarks this evening. This is characterised by a form of paralysis in which we have instead of flaccidity spastic rigidity, exaggerated in place of diminished reflexes, absence of wasting, and unaltered electrical reactions. A fresh element appears in the fact that the intellect is often involved, and that convulsions, and ultimately epilepsy, are frequent. A further contrast is found in the distribution of the paralysis, which in the so-called infantile paralysis may be widely distributed, involving all the extremities, or narrowly limited, to one limb or even to a single group of muscles, but in the spastic group is hemiplegic, diplegic, or paraplegic, monoplegia being distinctly rare.

With regard to the distribution of the paralysis, statistics appear to show that right and left hemiplegias are distinctly more common than diplegias or paraplegias. The cases I have seen myself have by no means observed this proportion, hemiplegias having been few, but their number is far too limited to base any deductions of this sort upon, and I am content to accept the reports of those who have had access to a large number of cases.

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* A Paper read before the Midland Medical Society.

In these infantile cases of spastic paralysis, the rigid spasm leads early to contractures, which are developed much more easily than in adult cerebral paralyses. There is much variety in the contractures exhibited. In the cases of diplegia and paraplegia a marked feature is the spasm or contracture of the adductor muscles of the thigh. This gives rise to a peculiar cross-legged position of the lower limbs, and, if the child has the power of walking, the peculiar gait known as "cross-legged progression," in which the foot is put down in front of or even across the other.

Besides spastic rigidity, there are to be observed in a large proportion of cases disorders of movement in the paralysed limbs. These are either of the nature of athetosis, choreiform, or associated movements. Choreiform movements may constitute the most obvious feature of the disease, there being but a small residue of paralysis and rigidity.

Idiocy may be present in all degrees, some of the patients with spastic paralysis being the inmates of idiot asylums, while others are merely backward children, possibly fondly imagined by their parents to be rather above the average in mental development. The severer cases of mental weakness are found among the diplegias and paraplegias, obviously on account of the bilateral nature of the lesion. Even in these, however, some of the patients attain to normal mental development; indeed, the degree of idocy bears no necessary relation to the degree of paralysis.

The cases which may be aggregated into a group of infantile spastic paralysis by virtue of the common characters of spastic rigidity, absence of atrophy, normal electrical reactions, and exaggeration of deep reflexes, present great variety, both in clinical appearance and in the pathological lesions with which they have been found associated. By dividing them into smaller groups, in accordance with recognisable types, progress may be made in the study of their nature. Thus, they may first be regarded from the point of view of the distribution of the paralysis, and we recognise spastic hemiplegia, spastic diplegia, or bilateral hemiplegia, and spastic paraplegia. Whatever the distribution of the spastic paralysis, its common features, as just enumerated, define it as having its seat in the upper segment of the motor path, consisting of the cortical ganglion cell, the pyramidal fibre proceeding from the cell, and the terminal ramification of this in the spongy substance of the anterior cornu. Hence these spastic paralyses are indifferently referred to as the cerebral palsies of childhood, and might perhaps with greater safety be termed the cerebro-spinal palsies of childhood.

In this division the hemiplegic group rather stands away from the other two, which on the other hand tend to run into one another. Infantile hemiplegia owns a variety of causes, and in only a limited number of cases is the condition congenital, either the result of intra-uterine disease, or of accident during parturition. In spastic diplegia and paraplegia, on the other hand, the condition dates from birth in a large proportion of the cases, and is the result of injury to the child during its passage into the world. A classification of the infantile cerebral paralyses, according to the period of their origin, has, therefore, been made, and seems more satisfactorily to associate together cases of similar nature. Thus we have first, the paralyses of intra-uterine onset; second, the birth palsies; and thirdly, the acute (acquired) palsies.

The birth palsies form the most interesting group; they most frequently exhibit bilateral paralysis, which may be marked in degree, or may be a mere paresis, overshadowed by the associated rigidities and contractures. Gowers says that all four limbs are affected in about two-thirds of the cases, and the trunk and neck muscles are also conspicuously involved in about a third. In a small proportion the limbs of one side only are affected, and in rather fewer cases the legs alone suffer to a considerable degree. Very rarely the symptoms are confined to a single limb.

Mental defect exists in at least two-thirds of the cases, and varies from a doubtful amount to absolute idiocy with permanent inability to speak. Where there is great mental defect, the paralysis is considerable. There may, however, be very considerable paralysis with slight or no mental defect. Convulsions are said to occur only in a small proportion of cases. If so, the few I have been able to investigate have had an undue share of this symptom. The convulsions are not at birth, but usually come on in the first year. In one of my cases, the child was never able to walk, but had no convulsions till 1 year and 10 months old.

In cases such as these a definite connection has been proved between the symptoms and the occurrence of meningeal hæmorrhage. Prolonged and difficult labour was noticed as frequently appearing in the history of such cases from the time attention was first directed to them by the well-known orthopædic surgeon, Little. The lesion which actually does the damage is meningeal hæmorrhage, which has been definitely demonstrated to have occurred in consequence of injury during labour by Dr. Sarah McNutt. In children who present convulsions, rigidity, and paralysis, and die shortly after birth, meningeal hæmorrhage is invariably found. It may be on the convexity or at the base, and the convolutions may be much compressed and injured by it. When early death does not take place, in which cases it is allowable to assume that the hæmorrhage is less extensive than in the fatal cases, the blood will shortly be removed and traces of the hæmorrhage entirely disappear. A condition of atrophy of the convolutions in a more or less limited area is then found, and is an expression of the damage done by the original hæmorrhage. Chronic meningo-encephalitis, sclerosis, and cysts are also conditions which are found in these cases which survive the early months of life.

The morbid lesions in the cases which originate *in utero* are not so clearly made out. There may be gross cerebral defects—porencephaly; there may be defective development of the pyramidal tracts; there may be a defective development of the cellular elements of the cortex. A history of neurotic taint may often be obtained in these cases. Injury to the mother during pregnancy is another important cause, and may do actual injury to the brain of the child. Illness of the mother during pregnancy has also appeared to be a cause of the prenatal paralyses.

The acquired or acute cerebral palsies are associated with a variety of causes. In the cases which occur in the first two years of life or thereabouts it is frequently impossible to make out any exact causation; but sometimes the condition appears as a complication of an acute specific disease. Convulsions mark its onset, and when they have subsided the child is found to be hemiplegic; or the child may suddenly be found to be paralysed on one side, with no occurrence of convulsions. The paralysis may clear away to a great extent, and especially in the lower limb, so that the patient learns to walk; there is commonly flexion and rigidity of the upper limb. There is great variation in the mental condition. Post-paralytic disorders of movement are common.

It has been claimed that acute infantile spastic hemiplegia is due to a primary acute encephalitis affecting the grey matter—polio-encephalitis. The validity of this explanation and the extent of its application are still matters for discussion. Syphilitic arteritis and localised meningitis may account for some cases. The permanent symptoms of paralysis are in any case due to cortical sclerosis and atrophy.

In some of the cases of infantile hemiplegia, hæmorrhage, thrombosis, or embolism have been made out, but these are infrequent causes.

The diagnosis of spastic paralysis presents no difficulty in a well-marked case which has survived the initial disturbances and settled down into a permanent condition with more or less paralysis, rigidity, mental enfeeblement, and post-paralytic movements. Careful inquiry into the history is here almost the only means open to us for discrimination of the origin and nature of the paralysis.

In the acute onset of an infantile cerebral palsy there is much resemblance to that of an infantile spinal paralysis. In both we have a sudden onset, with fever, coma, and convulsions. In spinal paralysis, however, the convulsions are rarely repeated after the first few days, while in cerebral cases they are apt to be repeated. As the acute symptoms subside, and the paralysis becomes evident, its distribution, the condition of the deep reflexes, and the electrical reactions remove all difficulty in distinguishing the spinal from the cerebral palsy. Cases which are slight and not well developed, however, call for very close examination before their real nature can be determined. Choreic movements or athetosis on one side of the body are of the greatest importance as indicating the nature of a slight paralysis of one limb, the residue, perhaps, of an originally more extensive paralysis.

Mistakes in diagnosis usually take the form of overlooking the slighter cases owing to a want of vigilance or an insufficient acquaintance with the characteristics of the condition. Inasmuch as children with this condition are often brought under the notice of a doctor at the time when they should have begun to walk because they do not do so, and as they may also exhibit more or less marked signs of rickets, they are no doubt sometimes hastily written down as rickets, a diagnosis of which time proves the insufficiency. I have myself made this mistake, and I think it was due to imperfect appreciation at the time of the characters of infantile spastic paralysis. In other cases of which I have notes I find that the patients have been treated by others for rickets.

On the other hand an indiscriminating enthusiasm for the more rare diseases has led to cases of rickets with nervous spasm being diagnosed as spastic paralysis. In the pseudo-paralytic rigidity of rickets the spasm, carpopedal spasm, tetany is often confined to the hands and arms. It is painful, and attempts at extension cause pain, and it is intermittent and of transient duration; there are signs of rickets.

Careful investigation of cases of chorea which do not get well, and of cases of epilepsy in young people, may result in the discovery of slight paralysis and contractures, with exaggeration of reflexes, and the diagnosis of spastic paralysis, with its bearing on the prognosis in the one case, the treatment in the other.

It is impossible immediately to give a prognosis in the congenital form of cerebral paralysis. The most severe cases, indicated perhaps by early and recurring convulsions, with immobility of limbs, die; in those which survive, signs of normal use of the limbs, and of developing mental interests, are of favourable augury. Absolute uselessness of the legs, early contractures, and mental apathy are bad signs. In the acute cases, too, prognosis has to wait on the course of events, definite statements as to the permanency of the paralysis or the resulting mental condition being out of the question until several weeks have elapsed. It is always to be remembered that convulsions may recur and further mischief be developed.

In the cases which come under our notice at the time when they should walk but do not, it is difficult to estimate the amount of progress that may be made. To say that they will never walk is to run the risk of being confounded by the event; on the other hand, to indicate a possibility of improvement is often unwittingly to cause exaggerated hopes. Such patients will frequently attain some power of locomotion, but unless they improve rapidly under observation it is best to recognise that their progress towards walking will be very tantalising, and the final results hardly worthy the name of walking.

There are some interesting points in treatment. The initial stages of acute disturbance should be treated by absolute rest and ice-bag to the head; no drugs. Afterwards, when the resulting paralysis is before one, massage to the paralysed muscles, with passive movements of the limbs, is the sheet-anchor of treatment, and, besides keeping up the nutrition of the paralysed parts, may avoid contractures. It is right, where contractures have taken place, that the skill of the orthopædic surgeon should be invoked for their correction, whether by tenotomy or other means; and I have been impressed by the testimony of parents as to the advance in the power of walking which has followed operation in cases kindly placed at my disposal for the purposes of this paper by the staff of the Orthopædic Hospital.

The etiology of birth palsies affords a moral to the obstetrician, showing that where other things are equal and there is no question of additional danger to the mother; it is well to shorten as much as possible any labour which shows signs of being protracted. The dangers of instrumental delivery have been shown to be less than those of protracted labour.

Sir, the time-limit now imposed on papers does not allow that elaborate presentation of a subject in which we were wont to indulge. I must ask your pardon and that of the members present if, therefore, in endeavouring to avoid the Charybdis of diffuseness I have been seized by the Scylla of incohesion.

REPORTS OF CASES.

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A CASE OF CEREBRAL TUMOUR.

BY DOUGLAS STANLEY, M.D. EDIN., M.R.C.P
PHYSICIAN FOR OUT-PATIENTS, QUEEN'S HOSPITAL, ETC.

THE patient E. F., age seven, was brought to the hospital on account of inability to walk and difficulty in swallowing and speaking. His mother stated that previously he could run about quite well, was intelligent and went to school, that he could talk quite plainly and fluently, and that his memory was good. His previous illnesses were bronchitis at five months old, croup at twelve months, and measles at two and quarter years. His previous accidents were, a fall at three months old, and a fractured leg at four years. There was no ear disease. The family history was negative, there being nine other children without history of syphilis or tubercle.

The present illness began with a fall (seven feet), in September, 1897, after which the patient was sick, restless and staggered about, but there was no loss of consciousness. From this time, he became gradually less steady on his feet. A month later he had another fall, and was thought to have hurt his head on the right side, and he complained then and afterwards of pain there. About the middle of October he had a fit in bed; being found unconscious, rigid and vomiting, the unconsciousness lasting from 9 p.m. to 4 p.m., and during the following four days he remained in a drowsy condition. It was noticed that his speech, which previous to the fit had been unaffected, was impaired, that his face had become fixed, and he did not seem to use his right hand and arm as well as before. There were no twitchings or localised spasms observed in connection with this fit. From the time of this fit till his admission on November 7th there was no further vomiting, but he was otherwise getting worse, and his food came back through the nose.

On admission, he complained of severe occipital headache, but was quite sensible. He called things by their right name, but with indistinct articulation. There was nasal regurgitation, and there were rectal and bladder incontinence, and salivation.

Examination of the Nervous System.—There seemed to be no sensory alteration. The eyeballs showed inco-ordination of movement, but without any actual strabismus. There was marked loss of tone in the right masseter and temporal muscles, and the right side of the face was completely paralysed. There was paralysis of the soft palate which did not move under any stimulus. The right sternomastoid was flaccid, allowing the head in certain positions to fall over the left shoulder. The tongue deviated to the right on being protruded, and the submental muscles were flaccid. There was no paralysis of the limbs or trunk muscles. There was inability to stand or walk, but there did not seem to be any tendency to fall in any one direction, and the difficulty in walking seemed to be due to marked rigidity of the legs, the feet being pointed and the knees adducted. The arms were also rigid. There appeared at times to be more rigidity on the left side than the right, but often it was impossible to be certain as to this point. The movements of the hands and arms were jerky and spastic, and the patient had considerable difficulty in feeding himself. The knee and elbow jerks were increased and the plantar and cremasteric reflexes were also increased. The pupils were unequal, the right being somewhat larger, the reactions being sluggish. There was marked optic neuritis.

The patient got gradually worse, being unable to feed himself, and having increased difficulty in swallowing. Convergent strabismus became a distinct feature; the grasp of the right hand became more feeble. The temperature varied just above or below 97°, and the pulse was often very infrequent. The tongue showed wasting of the right side, and the submental muscles were more flaccid. It was impossible to ascertain any defect in hearing or other special sense, or to examine the larynx.

On January 2nd, the patient became more drowsy, the temperature rose to 104 on the morning of 3rd, he became rigid and unconscious, and developed Cheyne-Stokes respiration, and died in about two hours

The diagnosis made was that of a tumour beginning on the right side of the pons and spreading in a downward direction.

On *post mortem* examination, a considerable growth was found beginning, apparently (judging from the greater density of the structure), between the pons and the flocculus on the right side. It extended forward as far as, and involved, the 5th nerve, and downwards surrounding and imbedding the right facial, and to some extent the right hypoglossal. The anterior aspect of the pons was also covered by the growth so that both 6th nerves were concealed in its substance. This latter portion was much softer and seemed of more recent formation.

Remarks.—It will be seen from the *post mortem* findings that the diagnosis was completely verified. The fact that the right masseter muscle and the right side of the face were paralysed, together with the right sterno-mastoid and soft palate, but without paralysis of any of the limbs, could only be explained by a tumour involving the nerves to these muscles after their exit, and the subsequent convergent strabismus was an important factor as showing a spreading surface growth. The tumour was a gliosarcoma in nature.

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

Thursday, March 9th, 1899, the President, Mr. VINCENT JACKSON, in the Chair.

Coloboma and Malformation of Auricle.—Mr J. Jameson Evans showed a boy, aged 13, with double coloboma. The right retina was functionally active all over, but the left presented a quadrant corresponding to the coloboma which was not active. There was left-sided hemiatrophy of the face and the left eye was slightly smaller than the right. The right ear was absent, being only represented by a small nodule behind the ramus of the jaw in the position of the tragus, and another larger nodule at the base of the mastoid process, both containing fibro-cartilage. Immediately behind the anterior nodule there was a small opening representing the external auditory meatus which extended inwards for about three-quarters of an inch and secreted ceruminous matter. He could only hear on contact on that side.

Gall-stone.—Dr. Stephen showed a gall-stone the size of a small walnut which had recently been passed by a woman. There had been repeated attacks of hepatic colic accompanied by jaundice; these had been treated with opium. In the last attack there was no jaundice, and it was treated by chloral hydrate, 18 grains every two hours. The attack lasted from February 23rd to March 1st, when it suddenly ceased. Dr. Stephen believed that the stone had passed into the duodenum through the common bile duct, and that the chloral had produced great relaxation of this.

Fracture of a Skull.—Mr. T. Vincent Jackson exhibited a piece of the squamous portion of the left temporal bone, measuring 2 in. by 1¼ in., which had been detached and driven into the brain under the following circumstances:—On February 11th a gentleman whilst hunting was thrown from his horse, and it is supposed that the animal kicked him on the left side of the head. He got up and ran to catch his horse, but fell to the ground. Medical assistance was obtained, and he was conveyed to the nearest dwelling. When visited by Mr. Jackson a few hours later the patient was found to be conscious. An examination revealed on the left side of the head, about 1½ in. above the top of the ear, a transverse wound, the front end of which somewhat curved down, extending about 3 in. In the centre the point of the left forefinger detected a largish aperture in the cranial vault, also that the dura mater was torn, and there was a leakage of brain matter. The piece of bone shown had, as it were, speared the cerebrum, and was lying free in its substance. Under an anæsthetic it was found necessary to enlarge the opening by clipping along its upper margin before the piece of bone could be drawn out. This was effected with great care and caution. The patient, under the care of Dr. Keough, of Shifnal, progressed favourably, the cutaneous wound healing. The power of speech is affected to the extent that in conversation a word every now and then is dropped out, and no effort can recover it unless assisted.

Traumatic Club-foot.—Mr. Thomas showed a case in which he had successfully performed the operation of tarsectomy for severe talipes equino-varus, the result of injury to the external popliteal nerve. Full notes of the case were read.

Wrench for Club-foot.—Mr. Thomas exhibited a wrench he had devised for the treatment of club-foot. He drew attention to the value of wrenching, although he did not think in severe cases it was so efficient as tarsectomy or even Phelps's operation. He claimed for his instrument that the power could be applied much more directly than with the ordinary wrench, and found that the absence of the india-rubber coating was an advantage, as there seemed to be less bruising of the skin without it.

Dr. E. N. Nason read an Interim Report of the Committee appointed to consider the question of the Influence of Local Conditions in the Production of Malignant Disease.

Dr. T. Stacey Wilson read a paper on the Treatment of Enteric Fever as illustrated by the analysis of nearly one hundred consecutive cases with five deaths.

Mr. Leedham-Green read a paper on the Treatment of Tubercular Testis.

PATHOLOGICAL AND CLINICAL SECTION.

The fourth meeting of the Session was held at the Medical Institute on Friday, February 24th, 1899, at 8 p.m, the President, Mr. JORDAN LLOYD, in the Chair.

Typhlitis and Colitis wrongly diagnosed as Inflammation of the Vermiform Appendix.—Mr. Barling showed a youth, aged 17, upon whom he had operated a few weeks before. Since August 1898 the patient had suffered six attacks of abdominal pain with vomiting. The pain commenced always on the right side of the abdomen low down, and lasted from twenty-four to thirty-six hours; constipation was present during the attacks, but at other times there was occasional diarrhœa. When the boy was admitted to hospital there was a fairly well-defined indurated mass to be felt in the outer part of the right iliac fossa, its long axis being vertical, and its upper end disappeared under the margin of the ribs. The diagnosis made was recurring attacks of appendicitis. The abdomen was opened by a vertical division of the skin and aponeurosis and transverse division of the deep structures. The vermiform appendix was found perfectly healthy, free from adhesion, and without thickening. The outer half of the cæcum and the ascending colon as far as the examining finger could reach were found to be hard and densely thickened. There was no adhesion to the internal, anterior, or external surfaces of the bowel, but there was some adhesion posteriorly, and this part was stripped to determine if pus existed, but none was found. An enlarged gland was discovered in the mesentery. The wound was closed without anything further being done and the boy made a good recovery. He has had no attacks of pain since his admission to hospital, but of course during that time he has practically been in bed. Since the operation the boy's general condition has considerably improved, and the thickening felt before the abdomen was opened has greatly diminished.

Acute Transient General Anasarca.—Dr. T. Stacey Wilson read notes of this case. The anasarca exactly resembled that seen in advanced cardiac or renal disease. It commenced suddenly one morning in the feet. In twenty four hours the legs were swollen and dropsical, but the abdomen was not, although the labia were. During the next twenty-four hours it invaded the upper part of the body and the arms, and the face became so swollen that the eyes could not be opened. By the end of the second twenty-four hours the swelling of the face and hands reached its maximum, but that of the feet and legs had already begun to subside. By the end of four days the swelling had almost entirely subsided. There was no cardiac affection, no albumen or casts in the urine, and there was no evidence whatever of the œdema being due to any inflammatory process in the skin. The œdema was accompanied by a considerable degree of renal inadequacy, as the urine for a time was very scanty and poor in urea, but the œdema did not appear, as in renal dropsy, first in the face, but appeared first in the dorsum of the feet, and reached a high degree there before invading the legs. Similarly, the legs and thighs were so swollen that the patient could hardly walk because of their size and weight, before the least trace of œdema appeared in the face or hands or in the lumbar or sacral region. For want of some better explanation it was supposed to be of the nature of an urticarial attack, although there was not definite history pointing to a previous attack of urticaria or to any exciting cause.

Gangrene of the Lung.—Dr. T. Stacey Wilson also read notes of a case of gangrene of the lung, which had arisen in rather an unusual way. The first symptoms came on suddenly while taking active exertion. They were, sudden pain in the chest (especially on the left side), great dyspnœa, and faintness. The dyspnœa and pain lasted four days, and then both were relieved by the sudden expectoration of several pints of dark brown foul-smelling material. From the patient's description this seemed to be largely altered blood. He continued to expectorate foul-smelling material for some weeks and then gradually recovered, and was able to get about again. In a day or two the expectoration recommenced as badly as ever. He was admitted to the hospital, bringing up daily a pint or more of extremely offensive purulent expectoration. There was no evidence of any cavity that could be drained, and the patient died.

Unfortunately the diagnosis could not be cleared up, as a *post mortem* examination was refused. The history of such an attack in a previously healthy man seemed to point strongly to hæmorrhage somewhere near the root of the lung as the cause of the primary attack. The cavity which resulted was in some way prevented from healing up, and retention of pus, with putrefaction and subsequent gangrene of the lung, resulted.

Pyosalpinx of seventeen years' standing.—Mr. Jordan Lloyd showed a left pyosalpinx of seventeen years' duration, successfully removed by abdominal section from a woman forty-three years of age, whose life had been that of a chronic invalid since her first confinement, from which time her illness dated. The tube was universally adherent within the pelvis, measured eight inches in length and one in diameter, on removal was distended with much yellow pus, and its walls were nearly a quarter of an inch in thickness. The patient suffered from severe painful attacks at frequent intervals and had passed pus from the rectum for fifteen years. She developed an abscess in left groin two years ago, which was opened and was followed by fæcal fistula still discharging. She had been under almost constant medical attendance, but had declined operative treatment until her condition had become extreme. She made a good recovery from the operation, and is now in better health than she has been for many years past.

Gumma of Sclerotic.—Mr. J. Jameson Evans showed an eye removed by Mr. Lloyd-Owen from a male patient, æt. 45, in January, 1897.

The patient gave a history of progressive loss of sight with increasing pain in that eye, of one month's duration. On admission there were all the signs of an acute glaucoma. Tension + 2. On ophthalmoscopic examination, a sharply defined detachment of the retina was visible over the upper and outer quadrants. The right eye showed a few spots of old choroiditis. The pain and chemosis increased after admission, and it was eventually decided to excise the eye. After its removal the orbit was found to contain a vascular mass which was not removed.

Pathological examination of the eye revealed thickened and discoloured iris, and markedly enlarged ciliary processes. The retina and choroid were detached by a brownish albuminous exudation which was most abundant just behind the ciliary processes. Here and there the retina was detached from the choroid. The choroid was thickened and infiltrated with the albuminous material. The sclerotic was implicated in a dense vascular mass, which was removed with the eye, and which extended round the posterior and inferior two-thirds of the eye, and embedded some of the tendons. At one spot in the sclerotic there was an oval homogeneous mass about one-quarter of an inch long.

Microscopically: There was inflammation and thickening of the iris; ciliary processes were infiltrated with a loose fibrocellular deposit, replaced more posteriorly by the albuminous deposit, and a few fibrinous threads, and leucocytes. The latter extended back to the equator and detached the choroid and retina. There was retinitis and most marked dilation of vessels and round-celled infiltration of the choroid. The sclerotic was also infiltrated with round cells where it was implicated in the orbital growth, and here it had lost much of its striation. The homogeneous oval spot did not stain, but its immediate boundary stained deeply and it was surrounded by a small round-celled infiltration which was highly vascular. The subconjunctival tissue by the ciliary processes was densely infiltrated by round cells, with dilated blood-vessels and some blood extravasation. The orbital growth consisted of a highly vascular round-celled infiltration which here and there showed extravasations of blood. The ciliary vessels were enlarged and their walls showed fibroid thickening which in some places almost amounted to obliteration.

Three or four days after the excision of the left eye, the right eye developed glaucomatous symptoms with detachment of retina, and other symptoms exactly similar to those in the left eye. Under iodide of potassium and mercury the symptoms abated and entirely disappeared in a month. The patient is now under treatment by Mr. Jameson Evans for choroiditis, which unfortunately has affected the macular region, otherwise there is no reason to think that he would not have had perfect vision. At present, Right vision = $\frac{6}{12}$ with + 6D. Field full.

Cyst of Broad Ligament.—Dr. Purslow showed a Cyst of the Broad Ligament which he had removed by abdominal section from an unmarried woman aged 25 years. The cyst, which had been growing for three years, contained ten pints of fluid. It was found to be possible by removing the ovary and tube of the affected side to make a pedicle, and this was ligatured with interlocking silk ligatures. The interest of the specimen lay in the remarkably clear way in which the anatomical relations of such cysts to the ovary, Fallopian tube, and layers of the broad ligament could be demonstrated.

Early Lympho-Sarcoma of Vermiform Appendix.—Mr. Barling showed this specimen from a man aged 23, who was operated upon in December, 1897. For several months he had been the subject of attacks of pain in the abdomen, commencing in the umbilical region and settling in the right iliac fossa. The attacks were generally accompanied by vomiting. When admitted to hospital there was no localised tenderness in any part of the abdomen, and the vermiform appendix could not be palpated. The patient was kept under observation, as it was thought his attacks might be lead colic as he was a painter, or that possibly the pain was caused by renal colic, but five days after he was first seen he had an attack of pain [redacted]

MEDICAL DEPARTMENT OF THE NAVY.

ADMIRALTY,
NORTHUMBERLAND AVENUE, W.C.
21st March, 1899.

An Examination of Candidates for Entry into the Medical Department of the Royal Navy will be held on the 8th May next, and following days, at the Examination Hall, Thames Embankment.

Not less than fourteen Commissions, as Surgeon, will be offered for competition.

The forms to be filled up by Candidates will be supplied on application to this Department.

H. F. NORBURY,
Director General.

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from a married woman, aged 40, a patient of Dr. Hird, of Coventry. She had been married twelve years, but had never before been pregnant. The uterus was six months pregnant, and was also the seat of a huge rapidly growing multinodular myoma, which was cystic in parts, and filled the whole abdomen. She suffered from great pain and severe pressure symptoms. The hymen was found to be diaphragmatic and imperforate, except for a minute aperture which barely admitted a fine probe. She was admitted into the Hospital for Women, and on August the 22nd Mr. Martin dissected away the hymen, closing the raw surface with a fine catgut suture. As her sufferings were severe, and as it seemed extremely improbable that she could be safely delivered of a living child, he decided to extirpate the uterus. Accordingly, on September 2nd, he performed the operation of pan-hysterectomy. After removal the uterus weighed 14 lbs. The patient made an uninterrupted recovery, got up the fifteenth day after the operation, and returned home on September 23rd, exactly three weeks after operation.

Mr. Frederick Edge showed a kidney which he had removed by abdominal nephrectomy for a large cystic sarcoma. The patient made a good recovery.

Mr. Edge also showed a kidney which he had removed through a lumbar incision for pyonephrosis and perinephritic abscesses. During the operation the peritoneal cavity was torn into and some of the pus (which was recent and very foul) escaped into it. The peritoneum was energetically washed out and drained with iodoform gauze. Death, however, took place thirty-six hours later from a combination of shock and septic infection.

Dr. Stuart Macdonald showed a specimen of primary thrombosis of the superior longitudinal sinus, removed from a child a few weeks old who died recently at the General Hospital from marasmus. The patient was admitted under the care of Mr. Haslam, suffering from spina bifida, which had ruptured and become septic. The child had one slight convulsive attack and died with gradually increasing coma. The thrombosis was apparently a primary marasmic condition, and not in any way connected with the spinal disease.

Mr. Haslam read notes of a case in which he had operated successfully for an intussusception of five days' duration in a child aged nine months and a half. The onset of the disease was sudden, but the condition of the child when seen at the beginning of the fifth day was extremely good. There was then no vomiting or abdominal distension, and though nothing could be detected by manipulation, this caused some pain. There was a history of vomiting, constipation, the passage of a small quantity of blood from the rectum on two occasions, and, after admission, some flatus and a little loose fæculent matter. The rectum was empty. Under an anæsthetic a tumour was easily felt in the region of the hepatic flexure of the colon. The abdomen was opened through the right rectus, and on attempting to bring the tumour to the surface the intussusception was reduced. It was of the ileo-cæcal variety.

Mr. Heaton read a paper on "Acute Intussusception: its Progress and Treatment."

The seventh ordinary meeting was held on Wednesday, March 1st, at the Medical Institute, Birmingham, the PRESIDENT, Dr. W. G. LOWE, being in the chair.

Mr. Gamgee showed a case of coxa vara. The patient was a male, aged 16 years. The disease affected the left hip, and had been noticed seven months. The chief symptom was pain about the hip on standing. The chief physical signs were :—(*a*) Three-quarters of an inch of shortening; (*b*) free flexion; (*c*) abduction very limited; (*d*) the trochanter was above Nélaton's line; (*e*) muscular wasting; (*f*) displacement of the trochanter outwards. A radiograph was exhibited showing the dropping and lengthening of the neck of the femur which characterises the disease.

Dr. Kauffmann showed a man aged 53, the subject of senile chorea. The affection, which was attributed by the patient to the carrying of excessively heavy weights (he was a market porter), had come on gradually, commencing, two years before, in the left hand. There was no nervous disorder in any near relative, several of whom were living. The patient appeared aged beyond his years. His reason was good, his speech a little jerky, and his voice feeble. There was no aphasia. The handwriting, which the sufferer declared used to be very good, was quite illegible, the marks bearing no recognisable resemblance to ordinary letters. Choreic movements affected the face, the respiratory muscles, and all four limbs, and resembled in character those seen in juvenile chorea. They ceased only for short periods during sleep, being continued during the greater part of apparently sound sleep. Under observation the movements became markedly aggravated. The muscular weakness was such that the patient could not walk unsupported.

Dr. Short showed a case of wasting of the thenar and interosseus muscles of the left hand in a compositor. There was no history or sign of lead poisoning. He had worked for six years with a compositor's stick in the left hand, and six months ago the left hand was first noticed to be weak. There was some cramp in it at first, but no tingling or numbness of the hand. The hand gradually wasted, and when seen two months ago showed the reaction of degeneration. There had been no sensory symptoms throughout. Great improvement had taken place under treatment, and now there was no reaction of degeneration. His hand was now fairly strong. In spite of the great improvement the prognosis in this case was still doubtful. It was shown as one of the cases referred to in Dr. Short's paper on the treatment of "Occupation Neuroses."

Mr. Jordan Lloyd showed specimens of carotid and aortic aneurisms removed *post mortem* from the body of a man thirty-eight years of age. The man had a healthy history and had never suffered from venereal disease of any kind. Seven weeks before his death he had first observed a swelling in the right side of the neck at the level of the upper border of the larynx, which had the ordinary characters of a carotid aneurism. He was admitted into the Queen's Hospital for the purpose of ligation of the vessel. He was then in his usual health. During the night preceding the morning on which the operation was to have been performed he was suddenly taken with hæmoptysis—small in amount—became collapsed and died within half an hour of the onset of the first symptoms. The ***post mortem*** showed death to have been due to a rupture of a moderate sized aneurism of the thoracic aorta, situated about three inches beyond the arch and developed from the right side of the vessel over the front of the spine towards the right pleura. Rupture had taken place into this cavity. The lower lobe of the right lung was adherent to the wall of the aneurism, and at the site of this adhesion an escape of blood had taken place into the lung giving rise to a large pulmonary apoplexy. The man had not complained of any symptom which directed attention specially to the chest, but the lungs and heart were examined in the ordinary manner and passed as healthy.

Dr. Walter Jordan read a paper on "Spastic Paralysis in Childhood."

Dr. Sydney Short read a paper on ten cases of "Occupation Neuroses."

SOCIÉTÉ FRANÇAISE D'ELECTROTHÉRAPIE.

Séance du 16 Février 1899
(Présidence de M. le Prof. d'ARSONVAL).

M. Grand relate le cas d'une malade âgée de 61 ans qui était atteinte de pouls lent permanent il y a quatre ans, et dont la guérison se maintient parfaite depuis cette époque.

En dehors du ralentissement du pouls, les autres éléments dont la réunion constitue habituellement ce syndrome: syncopes, attaques apoplectiformes ou épileptiformes, etc.; faisaient défaut et étaient remplacés par des vertiges, des bourdonnements, des éblouissements diversement colorés, des troubles gastriques et intestinaux tels que nausées, vomissements et évacuations alvines répétées.

Ces divers troubles duraient depuis plus d'un an et se manifestaient par périodes paroxystiques séparées par des rémissions assez courtes dont la durée ne dépassait pas 2 à 3 jours.

Le pouls battait de 27 à 38 fois par minute pendant les

périodes de paroxysme, et se relevait à 60 et 75 pulsations pendant les jours d'accalmie.

Il n'existait chez cette malade ni sénilité athéromateuse, ni lésions cardio-vasculaires.

Le traitement a consisté en galvanisations du pneumogastrique au cou: séances quotidiennes de 10 à 15 minutes de durée, avec une intensité de 5 à 7 milliampères, et accompagnées de séances de franklinisation avec souffle céphalique au moyen d'une pointe pendant deux minutes.

Les périodes paroxystiques devinrent graduellement plus courtes et moins pénibles, tandis que les rémissions devenaient au contraire plus longues, jusqu'au retour à l'état normal qui fut obtenu après six semaines et ne s'est plus altéré depuis 4 ans. Le pouls bat actuellement de 100 à 110. Le cœur est normal. La malade a récupéré 25 livres de son poids qu'elle avait perdues pendant sa maladie.

M. Dignat présente une électrode à pression mesurable dont le dispositif permet d'évaluer assez exactement la pression exercée par l'électrode sur le point moteur.

THE INFLUENCE OF LOCALITY ON THE PREVALENCE OF MALIGNANT DISEASE.

Interim Report of the Committee appointed by the Birmingham and Midland Counties Branch of the British Medical Association to investigate the Influence of Locality on the Prevalence of Malignant Disease in the Counties of Warwick, Stafford, Salop, and Worcester.

This Committee, which consists of Dr. R. M. Simon (Chairman), Dr. T. Law Webb, Dr. Thomas Wilson, Dr. Douglas Stanley, and Dr. E. N. Nason (Hon. Sec.), was appointed at a meeting of the Branch before which a paper on this subject had been read.* The meeting, after an interesting discussion, considered

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* The Influence of Locality on the Prevalence of Malignant Disease, by E. N. Nason, M.D. (*Brit. Med. Journal,* March 12th, 1898).

that the questions raised were of sufficient importance to warrant further investigation upon the lines suggested in the abovementioned paper, but upon a wider basis. With this object in view a resolution, proposed by Mr. Lawson Tait and seconded by Dr. Simon, was unanimously adopted appointing a committee of five.

The Committee has met four times and has collected a large amount of evidence from the counties of Warwick, Stafford, Salop, and Worcester.

The questions to be investigated have been approached in an absolutely impartial spirit, and the Committee has not concerned itself with any theories as to the ultimate nature of any "local influence" which may be present, but has spent its time in collecting facts which may prove or disprove the existence of such influence. So far, returns have been received from nearly 50 Registration areas in the counties above mentioned and promises of returns from many others.

These Registration areas have for the most part been subdivided into Parishes or groups of Parishes, and the returns from them extend, with one or two exceptions, over a period of ten years.

The total population of the districts from which returns have been received amounts to somewhat over 600,000, and the total number of cases of malignant disease recorded to about 3,500. The Committee has also obtained returns from some of the larger Hospitals.

The plan adopted in the various Registration areas has been to obtain returns of cases by the help of some medical man resident in the district who was sufficiently interested in the enquiry to give the necessary time, and who knew the physical characteristics of the district from which he supplied returns. These returns have been obtained from the Registers through the courtesy of the various Superintendent Registrars, to whom the Committee tender their best thanks. In many cases the returns have been accompanied by very valuable reports which have been of the greatest assistance to the Committee.

It is not intended, nor indeed would it be possible in this report, which, as many of the promised returns have not yet come in, must necessarily be incomplete, to deal with all the different districts included in the scope of the present investigation, or with more than a few of the many points of interest which have been noted. It may, however, be interesting to the Branch to hear some few particulars of the work done by the Committee as showing the kind of facts which have been collected and which have an important bearing upon the questions which the Committee is investigating. The following extracts from some of the reports which have been received will also serve as a guide to those whose reports have not yet been sent in:—

*The percentage death-rates for malignant disease for ten years vary greatly in the various districts and parishes between the low rates of ·3 to ·35 in some, to the high rates of ·75 to 1·5 in others. In some portions of these latter districts the rates are higher still, as noted by Drs. Rubra and Rowland, to whose reports reference will be made later on.

The M— registration area has a cancer death-rate much above the average. This is found on analysis to be chiefly due to a group of parishes, M—, H—, G. P.—, and L. P.—. The rates in these parishes are respectively 1·77, 1·74, 1·3, and 1·98. It is found that the mortality in the adjoining district of C— drops to ·68, and in the parish of C— itself to ·51. In the opposite direction a steady decrease is also found passing through the villages of B—, F—, and A—, with percentages of ·8 to ·7 till the large district of F—ll is reached, with the low percentage of ·34. Dr. Wall, in his report of the M— district, says, speaking especially of the sub-district of H—: "Some parts of it are very marshy and low lying." C—, on the contrary, lies on the steep slope of a hill. The F—ll district, again, is on higher and drier ground. Dr. Orton in his report of this district says: "The river Sowe is the only stream in this

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*The average mortality for malignant disease in England and Wales for the decade 1881–1890 was ·58 per cent.

district, and flows through the scattered district of S—. The subsoil here is a thin layer of clay overlying sand and sand-rock, both very porous."

Dr. Rubra has forwarded a very full and interesting report of the T— and F— districts, from which report the following extracts are of special interest: "I find nearly one-third of the deaths from malignant disease in the township of T— occurred in a small area a little more than a quarter of a mile in length. I have personally taken a census of this area, which is not thickly populated. There are 517 inhabitants, practically all the houses being occupied. This gives a percentage mortality of 1·9, or nearly four times that of the rest of the T— district. With regard to its physical conditions, the river Tame, which is highly polluted with sewage from the Birmingham district, flows a sluggish black stream in close proximity, some of the houses being on its banks. As a little further from the river a boring proves that the ground water rises to the level of the river, it is only fair to suppose that the polluted stream percolates throughout the area. I need scarcely say that the subsoil, which is mostly clay and gravel, is very damp, ground fogs are prevalent, and floods not unknown. The majority of the inhabitants of this area are poor people, existing in mouldy old cottages, the floors and walls of which are generally damp. The water supply, however, is excellent, being pumped from deep wells two miles away."

Dr. Martin makes an analysis of 50 cases occurring in B—, in which he points out some very remarkable grouping of cases. Thus in X. Road there were four deaths, occurring respectively at Nos. 3, 4, 6, and 22. At the back of X. Road runs Y. Street where three cases occurred, two of which were in houses whose backs adjoined the above-mentioned numbers in X. Road. "These houses," Dr. Martin states in his report, "are near those in Z. Street, where two other cases had occurred, are all very damp and are built on a clay bed; they are some of the oldest houses in B—. Opposite them is a big ditch nearly always containing water, and behind this is the churchyard on a level two or three feet above them." Of the Y. Street houses he says, "All these houses are damp and always have water in their cellars." In conclusion he says, "The cancer houses occur in groups; nearly all are built on clay; all but one are damp. Part of B— is built on sandy soil, and although houses here are very dirty and the inmates poor, they are almost free from cancer." The total cancer mortality for B— is much below the average, being only ·3, which fact lends additional weight to these observations.

With regard to the town of W—, a street analysis made out by Dr. Martin shows again some remarkable grouping of cases. It is noticed that in no less than six instances has more than one death from malignant disease occurred in the same house during the ten years, and in one instance three deaths. In frequent instances too it is found that the cases occur in close proximity. Thus the cases in T— Street were at Nos. 11, 13, 17; in M— Street at Nos. 37 and 39; in H— Lane at Nos. 15, 17, 19, and 37; in W— Villas at 3 and 4, etc.

Dr. Martin sums up as follows—"The geology of W— is interesting. The town is built partly on a sand-bed, partly on a clay-bed of varying thickness overlying a bed of limestone. This clay has in many cases been thrown out into mounds to get at the limestone. Houses have been built upon these clay banks and, speaking generally, these are the houses where cancer occurs. They are all damp, some very much so; they are among the oldest houses in W—. The new houses are almost entirely free. Parts of the town built upon the sand-beds are free, although in most of these positions the poorest of the inhabitants live crowded together under anything but sanitary conditions. The sand and clay-beds are in places sharply defined, a 'cancer area' on the clay-bed being likewise sharply defined from an area almost free from cancer contiguous to it on a sand-bed." Dr. Martin accompanies his report with a coloured map of W— in which these facts are represented graphically.

The percentage cancer mortality for the L— district for ten years is ·62. Dr. F. M. Rowland remarks that E—, Ch—, and C— are the districts with the highest rates, viz., 1·87, 1·5, and 1·52 respectively. The two former are very low lying, and practically on the water, subject to floods. The small village of C., on the contrary, is hilly and high above sea level. It has, however, a stream which, though rapid, some two years ago fell under suspicion of pollution, which was supposed to be the cause of the loss of some cattle.

The percentage for the neighbouring district of R— is ·71, and for the town of R— ·77; and for the town of A— ·79. From interesting reports on the physical conditions in these districts, kindly supplied by Dr. Hubbard and Mr. W. E. Rogers, we find that A— lies between the rivers Trent and Tame, and is very flat and low. Water can be reached anywhere at from four to five feet down. The soil is a black sandy peat. The town of R— lies low, and is skirted on one side by the Trent; the meadows close to the river are generally flooded after heavy rain. The soil is a loose washed gravel, with line of saturation 12 ft. to 14 ft. below surface.

The rate of the C— urban district is ·35, just half that of the contiguous district of R— above mentioned. Dr. J. N. Phillips' excellent report gives the geological characters of the district as "generally a gravelly soil of the new red sandstone formation, with a mixture here and there of clay beds. The surface consists of a series of undulations, sloping gradually down from Castle Ring, which is 800 feet above sea level. The surface formation, together with the gravelly subsoil, render it peculiarly adapted for the efficient filtration of surface waters."

Dr. Murray, in his report of the T—y union, says: "The parishes which have the highest rate of mortality for malignant disease are, with one exception, those which lie in the Teme Valley and on the south bank. The subsoil, I believe, is gravel. The river receives untreated the sewage of L— and T—, and all the valley is very liable to ground fogs almost nightly. The parishes which are free, as a rule, lie on higher ground." The percentage mortality for the whole district is ·89.

It is not possible to give extracts from all the reports received, but the above have been selected as being good instances and as being specially interesting.

It has not been forgotten by the Committee that in order to insure complete accuracy in the statistics upon which they have relied, correction should be made for both age and sex incidence. With regard to the latter, it does not appear that in any case dealt with so far the figures would have to be materially altered in consequence. With regard to the former, however, such correction would probably raise the proportionate cancer death-rate in most of the centres of industry and lower it in country districts, but it would scarcely affect the figures when two contiguous country districts are compared.

As far as this investigation has at present gone there seems to be a very large balance of opinion in favour of the following conclusions, which are also largely borne out by the facts collected by the Committee:—

1. Districts in which malignant disease occurs with a frequency much above the average, often lie side by side with other districts in which it rarely occurs.

2. The districts in which malignant disease occurs with the greatest frequency are usually ill-drained, low-lying or flat, or border upon streams, while those districts where it is less common are usually higher, drier, and more open, with the possibilities of more rapid drainage of surface waters. .

That certain physical conditions influence the prevalence of malignant disease is suggested by the figures published in the Supplement to the 55th Annual Report of the Registrar-General, Part I. Here it is seen that the cancer death-rate (uncorrected for age or sex), which averages in the decade 1881-90 ·58 per 1,000 per annum, rises in the case of Cambridgeshire to ·78, and in that of Huntingdon to ·91, and falls in the cases of Durham, Staffordshire, Lancashire, Derbyshire, and Monmouth to from ·44 to ·48. This variation was also noticed in the same counties in the two previous decennia. Dr. Tatham remarks in his excellent comments on these returns; "An examination of the uncorrected cancer rates in the separate registration districts within and around the counties of Huntingdon and Cambridge, shows a fairly well-defined area in which cancer would appear to be exceptionally prevalent. This area consists of the districts of Stamford, Bourn, Spalding, and Holbeach in Lincolnshire, Oundle and Peterborough in Northamptonshire, and the entire counties of Huntingdon and Cambridge with the exception of the registration districts of Caxton, Linton, and Newmarket." A glance at the map will show that this particular area is a low-lying piece of land through which slowly meander the various rivers and streams which terminate in the Wash. Mr. Alfred Haviland, in a paper published in 1879, says: "The mortality . . . is highest in those districts which skirt the rivers of our country which are seasonally flooded. . . . Throughout England and Wales there does not exist an important river subject to seasonal floodings that does not flow through high mortality districts." He adds that all those districts where cancer does not thrive "are characterised by being high and dry and geologically composed of non-retentive soils—permeable soils and subsoils, in fact."

Dr. H. W. Symons published in the December number of *Public Health* a careful and interesting paper on "Cancer in Relation to the Dwelling." After tabulating the cases of Malignant Disease occurring in the city of Bath for a number of years he comes to the following conclusions:—"In Bath there are no 'Cancer houses,' and I find no evidence that locality has any influence upon the prevalence of Malignant Disease. The cause of cancer appears, as far as this investigation affords information, to be generally personal or intrinsic." But it is unnecessary to point out that the problem in Bath with its "large nomadic senile population" is a far more complex one than is the case in country districts or in towns with a more fixed population. This characteristic while helping to explain the high Cancer mortality of Bath must also greatly increase the difficulty of drawing any correct conclusions from the results of an enquiry into the local incidence of Cancer.

Whether the character of the immediate subsoil apart from its humidity, or perhaps the stagnation or contamination of the water which it contains, has any influence on the prevalence of Cancer seems at present very doubtful. Some returns point very strongly to a greater prevalence on clay soils, while others again suggest a greater frequency on sand. In this connection it should not be forgotten that a shallow sand-bed overlying clay or other impervious material, a not uncommon condition, may be even more damp and water-logged than where the subsoil is entirely of clay. Again, if the clay is only a thin layer and overlies sand, sandstone, or other porous material, then a much dryer condition of subsoil obtains than where the reverse is the case. It also seems more than doubtful if the variations in Cancer mortality are in any way dependent on the quality of the water used for drinking purposes, or on over-crowding *per se*. What however seems almost certain is, that there is a direct connection between the presence of subsoil water within a certain distance of the surface and the prevalence of Malignant Disease.

It is hoped that the returns for the four counties included in the scope of the present inquiry will be sufficiently complete by next autumn to enable the Committee to present to the Branch a full report dealing as far as possible with each district. The Committee should then be able to add some valuable information to what is already known on this subject, of the importance of which there can be no doubt.

The Committee wish to take this opportunity of thanking all those who have been good enough to aid in the work by supplying reports and returns, and without whose assistance the work, of course, could not have been even attempted. In conclusion your Committee asks permission to continue its investigations for another year with the approval and sanction of the Branch.

REVIEWS.

TREATMENT OF DISEASE BY PHYSICAL METHODS.*

THIS work deals with a subject which unfortunately has received very superficial attention in this country, namely, the treatment of disease by methods other than by drugging. It deals with treatment by massage, electricity, and both combined. The first part of the book is devoted to massage and its technique, and we need not enter into the various remarks made by the author in the course of his lectures other than to say that he is careful in every instance to give the reason or indication for different methods of manipulation. We may, however, consider the remarks made as to the employment of massage as a whole. The author regards it as an important physical aid in the treatment of diseased states, and that it is extremely useful as a healthy tonic. This we must admit candidly to be the case. We are fully aware, however, that in this country particularly massage is overdone in some respects, while in others it is quite in its infancy. This is to a large extent due to a want of systematic teaching. The practitioner seems to think that in some case or other it may be employed, and the patient is relegated to the mercies, tender or otherwise, of the masseuse. This is undoubtedly a bad condition of affairs. The medical attendant should be well versed not only in the indications for massage, but in the special forms advisable for each individual case. Were this so he would be in a position to prescribe massage in suitable doses as accurately and as carefully as he would a preparation of opium. It is this ignorance of the subject that has largely brought massage into discredit, an ignorance which would not be tolerated in pharmacy or therapeutics. The author's chief object is the counteracting of this tendency by dealing with the subject of massage as one would deal with diet or any other form of treatment.

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* Treatment of Disease by Physical Methods. By Thomas Stretch Dowse, M.D. Bristol : John Wright and Co.

A long chapter is devoted to the "Weir-Mitchell" treatment, and in it the author gives some very practical suggestions concerning the management of cases and the kind of patients who are likely to derive benefit by this method of treatment. We are glad to notice that the tendency to over-feeding in the Weir-Mitchell treatment is condemned by the author as often being devoid of good result. In diseases of the abdomen, such as dilatation of the colon, enlargement of the liver, dilatation of the gall-bladder with catarrh of the ducts, massage is strongly recommended by the author. Here, however, we rather think there is a tendency to extremes, as the writer speaks of this method in such a manner as to lead us to suppose that there is none other, and although massage of the abdominal organs is of considerable value and help, we must admit that it cannot claim the first place.

A long chapter is devoted to "Neurasthenia and Hysteria," according as they affect both men and women. Some extremely interesting suggestions are given as to the treatment of hysteria—more particularly, perhaps, the male form—by physical methods. The writer quotes several cases of neurasthenic and hysterical manifestations as occurring after accidents, and certainly the results obtained are encouraging. So in the treatment of spinal strains and bursal affections, the improvement obtained by massage, including systematic passive movements, shows clearly that in this method of dealing with such ailments we have at hand a very important adjuvant in treatment.

Massage as applied to some diseases of children is particularly interesting, and we can fully endorse the writer's statements as to the use of proper and systematic massage in wasting diseases of children, especially those forms accompanied with intestinal atony. Massage in children is perhaps of greater value than in adults for promoting and maintaining the due performance of the nutritive processes; and when we remember the extreme rapidity with which we pass from health to disease in connection with the intestinal functions, we must be glad to welcome any system which will enable us to withstand the disastrous results of gastro-enteric disorders.

The Neuheim or Schott treatment in diseases of the heart is clearly described and full directions for its application are given.

The book closes with two chapters on electio-physics and electro-therapeutics, in which battery treatment of cases is fully described; and one or two slight inaccuracies do not affect the general utility of these chapters.

With the exception of a slight tendency to redundancy the book is most interesting reading, and we know of no work which so clearly expresses the therapeutic value of physical methods in treatment or which shows more decidedly the use which should be made of massage and allied methods.

ATLAS OF LEGAL MEDICINE.*

THIS work is the second of the series of hand atlases in course of publication, by the Rebman Co., and its object, like the others of the series, is to bring within the reach of all an accurate set of illustrations of the various subjects of medico-legal importance. The work, therefore, consists of a large number of coloured and uncoloured plates, with a letter-press description, which in each consists of merely the notes of the case. The subject of forensic medicine is perhaps one which suffers from lack of suitable illustration, and there is hardly any in which it is more important. The student of legal medicine must be familiar with the appearances presented by the body and internal organs under a variety of circumstances, and as these are of necessity unlikely to be observed by one individual unless his experience extend over many years, it is obvious that cases as they occur should be carefully and accurately recorded by photography and colour as an aid to others. As is well known, the author was one of the greatest authorities on legal medicine, and his collection of specimens was probably the finest in the world, and we may congratulate ourselves on having a series of illustrations representing such a large amount of valuable material. The plates themselves are extremely accurate and of high artistic value. We would especially particularise the plates relating to poisons, which have been rendered in colours with absolute faithfulness. We have, therefore, no hesitation in saying that the "Atlas of Legal Medicine" is a work of unquestionable value and could not be otherwise than of service to every practitioner of medicine.

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* Atlas of Legal Medicine. By E. Von Hofmann. Edited by Frederick Peterson, M.D., and Aloysius O. J. Kelly, M.D. London: The Rebman Publishing Co., Ltd.

AN AMERICAN TEXT-BOOK OF THE DISEASES OF CHILDREN.*

We are not surprised at the appearance of a second edition of this work, as the reception accorded to the first was, in itself, sufficient proof of the high value of the book. In the present edition several changes have been made in order to bring special articles up to date, thus Tuberculosis and Malaria, have been included in the infectious diseases. Measles, Diphtheria, and Cretinism have been completely revised, and Typhoid Fever, Scurvy, Tuberculous Meningitis, and several others have been rewritten. Among other new articles are "Modified Milk, and Percentage Milk Mixtures," "Lithæmia," and a section on Orthopædics, have been added. This will show that the whole work has been carefully re-edited, and when we state that the second edition appears in two instead of the somewhat bulky single volume of the first, we feel certain that all will admit that Starr's Text Book claims a foremost place among works on pædiatrics. Lastly we may add that the articles are as a rule of a sensible length, neither unduly short, nor wearily long, and there is a feeling of satisfaction in reading them, and all have a practical ring which cannot fail to impress the reader.

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* An American Text-Book of the Diseases of Children. Edited by Lewis Starr, M.D. London: The Rebman Publishing Company.

ATLAS OF SYPHILIS AND THE VENEREAL DISEASES.*

THIS is another of the Hand Atlas Series recently issued by the Rebman Publishing Company, and we can heartily congratulate the publishers in selecting so useful a work. The majority of atlases on this subject are large and expensive, yet there is scarcely any subject in medicine in which some such series of illustrations is so frequently required by the student and the practitioner. The many and varied lesions of syphilis in all its stages are represented with wonderful accuracy, and where all are good it is difficult to select any for special notice. Plates 24, leukoplasia of the neck, and 50 and 51, representing serpiginous gummy ulcers, may perhaps be mentioned as excellent examples of the class of illustrations, numbering over 70, found in this volume. There is a short and concise account of the cases appended to each plate.

The second part of the book consists in a description of Syphilis and the Venereal Diseases, which, though brief, contains much useful information, and serves to unify the more varied character of the plates.

We confidently anticipate that this atlas will be of the greatest use to a large portion of the profession in supplying a distinct want.

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* Atlas of Syphilis and the Venereal Diseases. By Franz Mräcek. Edited by L. Bolton Bangs, M.D. London : The Rebman Publishing Company.

AN AMERICAN TEXT-BOOK OF GYNÆCOLOGY.

A SECOND and revised edition of this book, which is now so well known to gynæcologists as one of the leading works on the subject, has been issued. Much new material has been added, and some of the old eliminated or modified.

In the chapter on Distortions and Malpositions of the Uterus the authors give a good account of the present state of our knowledge on these pathological conditions, vexed questions being treated with strict impartiality, but the authors feel qualified to speak in condemnation of the stempessary in favour of curettage in cases of endometritis and dysmenorrhœa, and with them we heartily agree. The subject of Pelvic Inflammations is treated at length, whilst in the chapter on Ectopic Gestation this subject is presented in a clear and concise way.

Illustrations and plates (in all 380) have been depended upon in great measure to demonstrate and explain the anatomy of the parts concerned, thus adding materially to the value of the work.

As in the previous edition, the type and style of the book are excellent, and we can heartily recommend it to all who wish to keep up with the advances of modern gynæcology.

EDINBURGH MEDICAL JOURNAL, VOL. IV.†

WE have been sent the fourth volume of the *Edinburgh Medical Journal.* Since the beginning of the present series this well known Journal has not only fully maintained its position as one of the best medical publications in the United Kingdom, but has widened its reputation so as to rank as a leading paper in Europe. The present volume in every way maintains the high standard of previous years, including as it does many important contributions in Medicine and Surgery. The article on "The Clinical Aspects of Arterial Pressure," by Dr. George Oliver; those by Dr. Alexander Morison on "The Relation of the Nervous System to Disease and Disorder of the Viscera," and the "Innervation of Intracranial Vessels;" "Acute Pneumonia of Childhood," by Dr. James Carmichael, are among some of those which particularly strike us as valuable. The *Edinburgh Medical Journal* is at present under the able editorship of Dr. G. A. Gibson; and we can congratulate the publisher, Mr. Young J. Pentland, on the high quality of the volume.

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* An American Text-Book of Gynæcology, Medical and Surgical, for Practitioners and Students. Edited by J. M. Baldy, M.D. London : The Rebman Publishing Company.

† Edinburgh Medical Journal, Vol. iv. Young J. Pentland.

WRIGHT'S "GOLDEN RULE" SERIES.

We have received No. I.–III. of these small and handy books. That on "Surgical Practice," by E. Hurry Fenwick, has already gone through four editions, and is too well known to call for notice at the present time. No. II. Golden Rules of Gynæcology, by S. Jervois Aarons, M.D., and No. III. on Obstetric Practice, by W. E. Fothergill, M.D., also strike us as eminently practical. The "Golden Rule Series" is a useful one, and we hope for further numbers

We have also to draw the attention of our readers to John Wright and Company's Physicians' Book for Private Formulæ, with letter index. It is intended for the consulting room table, and to contain favourite prescriptions.

THE SURGICAL ANATOMY OF THE LYMPHATIC GLANDS *

Recent advances in the operative treatment of malignant disease have made the study of the exact position of the lymphatic glands and their tributaries of great practical importance. By injecting the tissues with formalin, Mr. Leaf has been able to demonstrate, not only the exact position of the glands, but to show in places an actual communication between the lymphatics and small veins.

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* The Surgical Anatomy of the Lymphatic Glands. By Cecil H. Leaf, M.A., M.B., F.R.C.S. Westminster: Archibald Constable and Co. 1898.

This book is a result of careful and accurate work in a direction that has not hitherto attracted much attention. The printed matter is clear and concise, and there are a number of well coloured diagrams that show at a glance what the author wishes to demonstrate. It will be found a convenient book of reference to surgeons when dealing with malignant disease.

SIXTH INTERNATIONAL OTOLOGICAL CONGRESS, 1899.

THIS CONGRESS is to be held in London from August 8th to 12th, under the Presidency of Dr. URBAN PRITCHARD.

The British Organization Committee, which numbers over 70 members from Great Britain and the Colonies, has Mr. A. E. Cumberbatch for its Treasurer, and Mr. Cresswell Baber for Secretary-General. It has also appointed the following Sub-committees, viz.—

1. *Reception.*—Vice-Chairman, Mr. Field; Hon. Sec., Mr. R. Lake.
2. *Excursion.*—Vice-Chairman, Dr. Dundas Grant; Hon. Sec., Mr. P. Macleod Yearsley.
3. *Dinner.*—Vice-Chairman, Mr. Mark Hovell; Hon. Sec., Mr. L. A. Lawrence.
4. *Museum.*—Vice-Chairman, Mr. C. A. Ballance; Hon. Sec., Mr. A. H. Cheatle.

The President-Elect is Chairman of all the Sub-committees.

The Meetings will be held at the Examination Hall of the Royal College of Physicians of London, and Royal College of Surgeons of England, and the following details have been arranged:—On Monday evening, August 7th, a preliminary Reception will be held by the President-Elect. On August 8th, 9th, 10th, 11th, the Congress will be in session, and will be followed on Saturday, August 12th, by an Excursion for Members and their lady friends.

The official languages of the Congress are English, French, German and Italian.

The subscription, to include a copy of the transactions, is fixed at £1, to be paid to the Treasurer, Mr. A. E. Cumberbatch, 80, Portland Place, London, W., before the opening of the Congress.

The subject chosen for special discussion is "Indications for opening the Mastoid in Chronic Suppurative Otitis Media," which will be introduced by Prof. W. MacEwen of Glasgow, Dr. H. Knapp of New York, Dr. Luc of Paris, and Prof. Politzer of Vienna.

A museum of specimens and instruments relating to otology, shown by members, will be held during the meeting. Communications regarding the museum should be addressed to Mr. A. H. Cheatle, 117, Harley Street, London, W.

Intending members of the Congress are requested to send in their names to the Hon. Sec. Gen. as soon as possible, and in any case *not later than May 1st.* Titles of communications, together with a short abstract of the same, to be sent to the Hon. Sec. Gen. by the same date. According to the regulations of the Congress, no papers shall exceed fifteen minutes in reading; therefore all long communications should be read in abstract.

PUBLISHERS' DEPARTMENT.

New Inventions, Drugs, etc.

We have received samples of their "Cocaine and Krameric" and "Bismuth and Dover's Powder" tabloids from Messrs. Burroughs and Wellcome. Both these preparations seem extremely convenient. The former for stomatitic and pharyngeal conditions is especially serviceable. The combination of Bismuth and Dover's powder in a tabloid form is likely to be of use to those who are travelling in summer.

New Books, etc., Received.

From H. Kimpton, London—

Elements of Alkaloidal Ætiology. By A. M. Brown, M.D.

From the Rebman Publishing Co., London—

The Sanitation of British Troops in India. By E. Carrick Freeman.

From J. and A. Churchill—

A Code of Rules for the Prevention of Infectious and Contagious Diseases in Schools. Issued by the M.O.S.A.

From the Sanitary Publishing Co.—

The Cry of the Children, or the Antivaccinationists.

From the Government Printing Offices, Washington—

Principal Poisonous Plants of the United States. By V. K. Chesnut.

We have also to acknowledge the following reprints :—

A New Forceps for Intestinal Anastomosis. By Ernest Laplace, M.D.
General Hospital Annual Report.
Diseases of the Thymus. By H. D. Rolleston, M.D.

⁂ Authors can have reprints of articles at the following rates :—

Not exceeding 8 pages	...	8/- per 100
„ 16 „	...	12/6 „

The re-arranging of the type is the principal cost in the production of these reprints, so that smaller numbers will be the same price. Larger numbers at a proportionate reduction.

The Subscription to the *Birmingham Medical Review* is 6s. per annum, post free.

NOTICE.—*All Communications, Exchanges, and Books for review, should be sent direct to the Printers and Publishers, Messrs. Hall and English, 71, High Street, Birmingham.*

THE

BIRMINGHAM MEDICAL REVIEW.

MAY, 1899.

ORIGINAL COMMUNICATIONS.

THE BEDSTEAD AS AN IMPORTANT FACTOR IN DOMESTIC HYGIENE AND COMFORT.

BY LAWSON TAIT, F.R.C.S., M.D., LL.D., ETC.

THERE is no article in ordinary life-long use with which we are so closely related, with which we spend so much of our time, which we so often occupy with such affectionate readiness and leave with such poignant regret as our bedstead. Yet how little care is given, certainly but little was given in the past to the principles of its construction and use, so that personally I feel that everything between the primitive Scotch box-bed filled with a good elastic truss of well-dried heather and one of Whitfield's Ideal Bedsteads, introduced by that firm with my own name attached as a hospital bedstead, there is nothing to choose. Both of these have excellently well carried out the first necessities of health and comfort, and all between had better be given up.

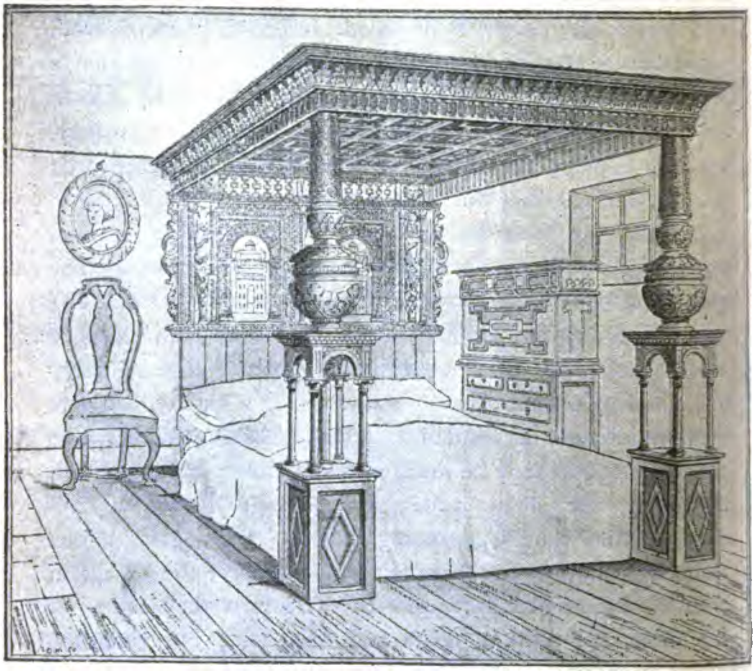
This is the theme I propose to discuss in the following pages, combining in my narrative of the "bedstead as a factor in sanitation" some advice which I regard as wholesome and much needed in the general management and arrangement of our bedrooms. That this advice will be successful I have little doubt from the wide spread revolution caused by a little paper which I wrote some twenty years ago, on "Bedroom Ventilation;"

out of which have grown the whole army of automatic ventilating and heating arrangements combined with and made into stoves of all kinds, gas and coal-burning. Had I patented the suggestions in that paper, I had now been more than a millionaire, but I do not regret that I gave my plans free to the public as I now give my notions on bedroom management.

It is always useful and full of interest to trace the evolution of any object, whether in the animal frame or in the ordinary use of humanity—and the growth of the bedroom and the bedstead have their interest like other things. From the time of the cave dwellers through the various stages of savage and nomad life, the dwelling space was used for all purposes in common, and it is only after the wandering hunter has achieved fixity of tenure and residence that he discovers the advisability of shutting off part of his house as a sleeping place. This becomes easier as he learns how to use the more permanent kinds of building materials, timber, brick and stone ; and as his skill grows, so does the fixity of possession and its continuity by descent, so that it comes practically that the bedroom appears with the pursuit of land tenure and culture and the erection of permanent houses. This brings us into the midst of advanced civilisation in which in Britain probably we were left by the Romans, the construction of whose bedrooms and bedsteads is quite well known, though neither were well adapted for permanent use in such a climate as ours. Even with the help of the efficient hypocaust the comfort of both in Britain must have been difficult to maintain, and when the skilled Italian artificers disappeared from our country in the fifth century we probably went back to the bundle of ling and its thin covering.

The Normans brought back a better kind of domestic building, and when the settlement of the country towards the end of the fifteenth century made domestic architecture possible for others than the Norman barons, the English yeoman adopted for his buildings the only material at his hand, the rough oak of his native woods and the dab and wattle still seen in the interstices of the beams till this day, formed from the osiers of the meadows and the mud from the river side. The Norman nobility, as we know from old drawings and tapestry representations, used the single bedsteads as used on the Continent now. The castles in which they lived were massively built of stone by guilds of imported masons. The floors were level and the doors could be made quite square, and fitted fairly well. The windows were provided in the main rooms with well-fixed glass, and at other times with well-made oaken shutters, so that the chambers of a Norman, with their large fireplaces abundantly supplied with wood fuel, must have been exceedingly comfortable habitations. The enormous thickness of their walls secured a very fair uniformity of temperature, and the downfall of cold air from the walls was modified by the hangings of tapestry. For their bedsteads there was no need of hangings, and, so far as I can find out, they did not use them.

But the Saxon farmer had to build his dwelling on lines determined by the curves of the beams at his disposal. The quaint and picturesque twists of a fifteenth century "oak and wattle" building are not the results of "settlement" or bad workmanship, and the inequalities of floor level were determined not by eccentricities on the part of the builder, but were the best he could do with his material. Casements, therefore, and doors could rarely be made true and closely fitting, in fact, they never were till late in the sixteenth century, when we find these beautiful panellings coming into use. "Draughts" in bed rooms must have been therefore the rule and not the exception alike in castle and farmhouse. In the former they arose not only from badly fitting doors and casements, but from the downfall of masses of chilled air from the stone walls, and therefore tapestries were hung round the rooms to keep warm the occupants of the little Norman bedsteads. The farmers could not afford the costly products of the French looms, and their women had something else to do than spend their time over the tambour frame. Therefore a smaller apartment was constructed within the bedroom in the shape of a huge four-post bedstead, hung round with curtains, probably of common homespun serge, or the box bed of the north was employed, though no trace of this has been found, so far as I know, south of the Humber. Into such contrivances a whole family must have crowded, probably with the addition of occasional visitors. This, of course, is an occurrence common enough even now in outlying Highland districts, where the box bed with its complete set of shutters still is in common use. Such a marvel as the Great Bed of Ware, dating certainly from the reign of Henry VII., and perhaps earlier, measuring twelve feet square, represents the best instance of the "room within a room" which was still in use in the vast majority of well-to-do houses until the beginning of the series of "Great International Exhibitions." Between 1851 and 1861 the French taught us the use of single bedsteads, and we introduced washhand basins and other lavatory arrangements to their notice, whilst the only permanent advantage either of the nations gained from the



Crimean War was the use of the bath and bathroom, taught us by the Russians, widely used now in this country, not so widely in France. The Great Bed of Ware, still preserved in the old timber and wattle Rye House Inn at Hoddisdon, is traditionally said to have accommodated twelve men and their wives, and if we may judge from what Howard records early in this century on the customs in hospitals and workhouses of the Continent and this country as well, in certain places, the statement about our fifteenth century carved oak bedsteads must not be regarded as any exaggeration, and we must not wonder at outbursts of plagues and pestilence arising directly from such causes. Nor does the moral atmosphere arising from such habits require explicit illustration.

The dawn of domestic sanitation, as we now know it, occurred as late as I have already said, and was not fully appreciated till well on in the seventies. Bath rooms began to be added to our homes. We still had grates in our bed rooms, with "closing registers," so as to preserve that delicious "bed-room" odour familiar in all sleeping rooms badly ventilated, and which, in my belief, is the initial stage of the growth of the power of typhus fever. Four-post bedsteads were still in common use, but the curtains had become mere survivals, as seen in a valance along the top rail and hangings about a yard wide at each corner, only sufficient to show what had been their original purport, but quite ineffective to keep off the draught which at that time was an essential feature of an English bed room. The bed was a huge ungainly object, expensive and uncomfortable, fitted with wooden slats, which resisted all movement and exercised their uncomfortable influence through the thickest of mattresses and feather beds. It was of course made of huge slabs of wood, into the interstices of which vermin sought and obtained access, and once there they could hardly ever be exterminated.

I remember very well that in London it was, one might say, the rule to have vermin in all bedsteads used by the public, as in hotels and lodging houses, and private homes were by no means uniformly free from them. Bugs were the subject of chronic jokes in all humourous writings, whilst at the present advanced period of the development of sanitation they are never alluded to. This is one of the minor improvements, minor in name perhaps only, which have taken place from the persistent arguments in favour of simple cleanliness, which is the gospel of true sanitation.

The first step in the right direction was the introduction of metallic bedsteads, and I remember very well the furor of indignation with which they were met—for nothing annoys an Englishman so much as any interference with his personal habits or belongings. Arguments of the most ridiculous and improper kind were used on all such occasions. Thus I have heard it urged by men who were otherwise sane, that they would not have gas fires because they could not spit in them, and could not poke them. But metal bedsteads have had their way, and now a home furnished with wooden bedsteads is looked upon with suspicion, and an hotel so provided would have but scant favour in popular estimation. But the old form of bedstead was imitated, of course, as closely as could be, just as the old chariot was imitated in our first railway carriages. The old wooden slats were replaced by a cross work of iron laths, as rigid and uncompromising as their predecessors. The "half tester" continued the survival of curtains, quite useless, but of great comfort to the English housekeeper, as unintelligible as that "blessed word Mesopotamia." Then the bedsteads must be double to hold two people, in spite of the warning lessons bestowed on every household every time a member of it had an attack of illness. The additional comfort obtained by every English man and woman on a visit to the continent when they found in their bed rooms two snug little single bedsteads placed side by side, made no impression till about ten years ago, when a few venturesome islanders began to dare the breath of scandal by having separate beds. There can be no doubt that this was the reason why the improvement was resented, for to this day the proof of the worst that can be circulated concerning a married couple is that "they occupy separate rooms." Separate beds was and is, to some extent still, regarded as almost as scandalous. Yet in all the best homes in our country each bed room has attached to it a "dressing room," with a single bed in it, and by this a great increase in comfort and health is attained. Now that we know that consumption is a disease communicated from one to another by contact and breathing the air already breathed by the consumptive, the hygiene precaution of separate beds ought to receive some public recognition. For centuries the Italian physicians have taught the possibility of the disease spreading from husband to wife, and from one person to another, when a tainted and a healthy person have occupied the same bed. There are doubtless many other diseases of which the same is true.

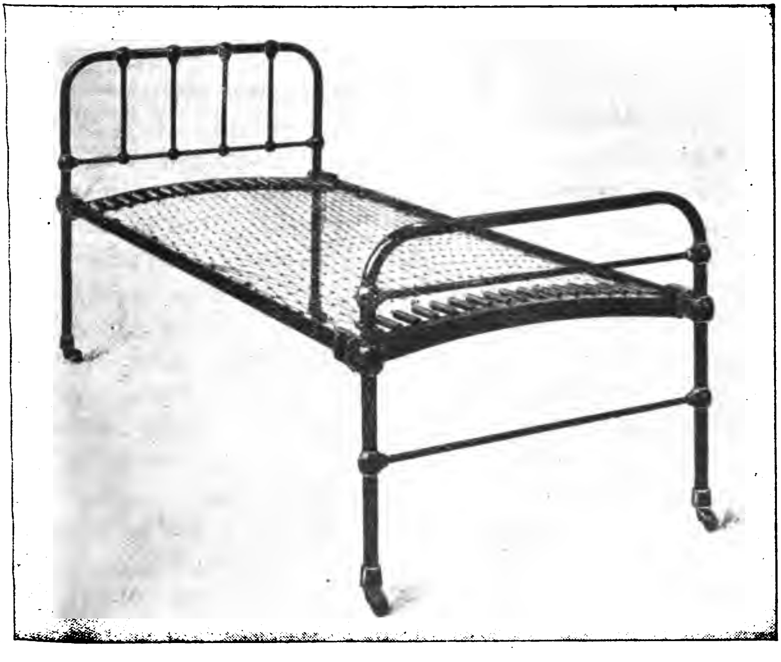
Having now roughly indicated what a bedroom and bedstead should not be, let me try to show what they should be and what they easily may be made, and that this is a matter of real urgency to personal health and comfort must come home to everyone when it is remembered that from the beginning of life to its end we spend more than half our time, and its saddest moments, in our bedrooms and in our beds.

First of all, the capacity of a bedroom should be such as to allow of at least 2000 cubic feet for each occupant. It should have a flue of at least six inches in clear diameter, and this flue ought not to be in an outside wall, otherwise the chimney is sure to smoke when there is a fire, and it will fail as an upcast shaft at all other times. Nearly all smoky chimneys arise from the fact that they are built in an outside wall which is too thin. The room should if possible be warmed by a gas fire, as in this way only can a uniformity of temperature be absolutely maintained, and for very young and very old people nocturnal variations of temperature are extremely dangerous. But a gas fire is not an old coal grate filled with asbestos. A gas fire must be constructed for the use of gas on entirely special principles. The sashes of the windows should fit well and in every instance be provided with plate glass, for the reason that nothing assists the variation of nocturnal temperature like the employment of the common sheet glass of the jerry builder. In going over the magnificent hospital built lately by the Birmingham Guardians for the old and sick, I had only one adverse criticism to make, that the windows, properly placed on both sides of the large wards, had not been provided with plate glass. The difference in price in the two kinds of glass is far more than paid for in the difference in the coal bills incurred within the first two years to keep the wards sufficiently warm, for plate glass is a most efficient non-conductor of heat, and thin sheet glass is not nearly so efficient.

In all bed rooms the head of the beds (I assume now that in every case the beds are single, and when there are two that they are placed alongside each other) should have their heads close to an inside wall. If this cannot be arranged then the wall and the ceiling for a space corresponding to the bedstead should be covered with a thick serge, loosely attached to the wall, to prevent the cataracts of air chilled by the cold wall falling on the sleeper. The worst of colds are caught in this simple way in the small hours of the morning, and many a fatal senile bronchitis might be saved by this simple expedient. For the same reason the bed must not be placed between a badly fitting window and the flue or the doorway. For ventilation by far the best plan is the familiar plan of making a small place between the window middle bars by raising the lower sash about two inches against a fixed inner sill plate. In this way a gentle stream of fresh air is diffused over the ceiling and displaces the foul air.

For the perfect hygiene of the bed room there are of course very many points of importance into which I cannot enter, as that the walls should be double, with at least two and a-half inches of something between them, that the outer layer of bricks should be vitreous (pressed Philadelphian), that the doors and windows should fit accurately, and, *most of all*, that the jerry builder should be avoided like poison.

We come now to the important matter of the bedstead, and the only people who require special consideration are those over six feet high, for whom extra length must be provided. Otherwise no bedstead need be more, and all ought to be six feet three in length, and no bedstead whatever, if constructed on the principles I intend to lay down, need be more than three feet wide, save for a few unfortunate people who are on exhibition. The material must of course be some metal, of which the best is steel and the worst is brass. Steel or iron, with the beautiful black enamel now used by Messrs. Whitfield, tastefully set off with a clean white Marcella counterpane, makes the smartest and prettiest bedstead in any room, be it in cottage or palace, and it gives the least trouble; but of course tastes differ in the matter of material. Both head and foot rails ought to be finished in a strong flat arch, an essential feature for the strength and smartness of the bedstead. For strength and steadiness the head rail must have four or five vertical bars fully secured into its arch and transom, so that the pillows



are not pushed out by restless sleepers, whilst the arch of the foot rail, not more than six to eight inches high, should have one horizontal bar to prevent slipping of the mattress. The head rail and upper legs are framed firmly all in one piece, and so with the foot rail and lower legs, whilst the frame of the bedstead is a solid parallelogram and a permanent frame for the "Dominion Wire Mattress," by far the greatest improvement in modern bedstead making.

The adjoining figures will show that this beautiful and unique contrivance is a linkage of steel wire in short pieces, bent and hooked so that every two pieces enclose an elongated parallelogram, save at the margins. If such arrangement were carried over space indefinitely it would mean that pressure at any point would radiate equally in all directions. But as the frame of the mattress has a length of twice its breadth the diminished longitudinal strain is supplemented by a series of strong spiral steel springs, which serve the additional purpose of giving a point at which detachment of the springs from their frames may be begun should it ever become necessary to remove them, or if detached the process of reattachment ends there. But there never ought to arise any necessity for detaching the springs or wire meshes, for the material supplied by Messrs. Whitfield is so good, the balances of tension so perfectly con-contrived, that it never varies. I am far beyond the average weight of male mankind, and I have used the same "Lawson Tait Bedstead" for now nearly seventeen years, and the tension of its springs has never varied in the slightest degree. The spring mesh is tightly secured all round the inside of the firm metal frame, made in one piece, so that the whole bedstead, weighing about 80 lbs., and joined together by beveled key joints or dovetails, comes into pieces by a few smart strokes from below,

upwards delivered on the dovetails on each corner, and for removals these three pieces pack on one another flat, and require only to be tied together. Compare this with the awful work of removing an old-fashioned four-poster.

Another of the faults of the old four-posters was that they were far too high, requiring, as we see in Hablot K. Brown's illustrations of Pickwick, wooden step-ladders by which to mount into the apartment. This fault is continued, to the great discomfort of short people and those who are old, feeble and ill. Measuring the bedsteads of a number of first-class hotels I find that to the upper edge of the mattress, thirty inches and over is the usual height—far too much for any save people much above the average stature. Twenty-four inches to the upper edge of the mattress is far more comfortable for everybody, and the most comfortable bed, in my opinion, in the matter of height, is one on which the occupant can sit with the knee bent at very little more than right angles. For men of average height (5 ft. 8 in.) this will be found to be about 17 inches, or just the height of an ordinary chair, and this should include mattress and bedding. The legs of such a bedstead would not be much more than a foot long, and the great advantage of this height with a width of 36 inches will be found in cases of illness in heaving people who require much moving, and this is the greatest test to which a bedstead can be put, for the attending nurses of the present day average only 5 feet 3-4 inches.

It was this matter of the bedstead during illness, especially surgical ailments, which first forced the question of the bedstead and its proper construction upon my notice. In cases of illness the nurses are fearfully handicapped by an old-fashioned high double bedstead. The number of serious illnesses acquired by young women and caused by the strain of lifting heavy and helpless invalids, has been very large in my experience. Therefore I say have all your bedsteads single, narrow, low, perfectly rigid, so constructed that they will not sag, and have a stout steel screw-eyelet fixed in the ceiling over the site of every bedstead, into which a cord may be fixed when wanted.

This question of sagging of a bedstead is of the greatest importance, and a thoroughly depressed bed-frame is a trouble even to those who are well, whilst in illness it means inevitably that however well placed the patient will shortly work round so as to be on his back—always a helpless position, and one which often contributes greatly to the discomfort of a patient, and sometimes even to his death. I have completely cured sagging by throwing the top and bottom rails of the mattress-frame into a widely opened arch, so that when occupied the whole wire mattress is slightly arched upwards from side to side, and when occupied by an average weight the mesh is exactly flat. Turning from side to side in such a bed is a matter of ease for even the feeblest, and the inevitable turning on the back is entirely prevented. The ring in the ceiling, which is no eyesore in the private bed room, assists most materially in the movement of those even who are in acute illness and who without it would hardly move at all, and would require every movement to be made for them by nurses. We never know when a bedstead may have to bear a bed of illness, therefore the ring should have a very common presence in the bed room ceilings.

Messrs. Whitfields have brought the "Lawson Tait Bedstead" to what I think is final perfection by the india rubber foot pad. It prevents noise and jarring when the bed has to be moved, and it is an enormous advantage over the old caster which was noisy, frequently came off, and these were a source of much trouble. Thus the caster whether off or on was a potent factor for the marking and disfiguring of a well-faced floor.

THE ADVANTAGES AND DISADVANTAGES OF VAGINAL CŒLIOTOMY,*

BY J. FURNEAUX JORDAN, M.B., F.R.C.S.

I AM speaking to night of vaginal cœliotomy as applied in the operative treatment of diseases of the appendages. This opening of the peritoneal cavity from the vagina is no new operation. It has, of necessity, to be performed in all cases of vaginal hysterectomy, and it is only when we consider the history of this latter operation that we see how the vaginal route has come to be adopted in the treatment of various diseases of the appendages. It is only in the last twenty years that vaginal hysterectomy, whether for carcinoma, myoma, or intractable chronic uterine disease, has been done with uniform success. It was in 1892 that Péan further extended the operation as a remedy for diseases of the appendages, and now we have the vaginal radical operation, *i.e.*, the removal of the uterus and the appendages per vaginam in cases of bilateral suppuration and destruction of the appendages, as practised largely by Leopold and Theodore Laudau, of Berlin, and by Doyen, of Paris.

There can be little doubt that the success achieved in vaginal hysterectomies and the advantages of this route led the way to the operative treatment of the appendages per vaginam. Operations on the appendages per vaginam had been done before the days of successful vaginal hysterectomy, but had in no way become established as they have now. In 1870 Thomas and Battey demonstrated the possibility of vaginal ovariotomy, though it was seldom practised till Dührssen brought it prominently before the profession. In his book on Diseases of Women, Thomas describes a case of vaginal ovariotomy which he had successfully performed. He says there :—" It is not my belief that the scope of this plan of performing ovariotomy will ever be very great, but I think that in cysts of small size which are unattached it will offer a valuable resource for the avoidance of years of mental suffering." Atlee attempted removal of an ovarian cyst by the vaginal route in 1857, but Thomas's was the first successful and completed case.

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* Read at a meeting of the Midland Medical Society on February 8th, 1899.

Writing in the *American System of Gynæcology and Obstetrics* in 1888, Goodell says that, though a number of successful cases have been reported, he does not think it will ever become a favourite mode of operation, but in 1891, in his Lessons on Gynæcology, he says:—"The success which has attended the few cases on record leads me to think that, in selected cases, ovarian cysts will in the future be more frequently extirpated in this way;" and he goes on to report, besides a case of his own, the cases of Thomas, Davis, Gilmore, Battey, Wing, and Baker. Byford reports two cases treated this way, one a dermoid, the other a unilocular ovarian cystoma. In spite, however, of these cases the operation of vaginal ovariotomy fell comparatively speaking into disuse. I take it that there were two reasons for this: the difficulty of the operation and the feeling that vaginal operations were less aseptic than abdominal. As I have already mentioned, we owe the renewed adoption of the vaginal route chiefly to Dührssen. Martin, of Berlin, too, has adopted it fairly extensively and with great success, and now it is probably impossible to enumerate all the gynæcologists who use it. In this country we owe its adoption largely to two men—to Mr. John W. Taylor, our ex-president, and to Mr. Archibald Donald, of Manchester. Mr. Taylor adopted the vaginal route as early as January 6th, 1893, in a case of ruptured tubal pregnancy with hæmatocele, as reported in his Ingleby Lectures for last year. He has adopted this route in a fairly large number of cases now with uniformly good results. Mr. Christopher Martin also has operated several times by this route with equally good results.

In the *British Medical Journal* for September 17th of last year, Archibald Donald published a paper on "vaginal section," in which he reports 60 cases, excluding those in which the uterus had been removed. I myself was a tardy convert to this route, and it was not till May 15th, 1896, that I adopted it.

The success of my first case, in which I was driven, as it were, to perform ovariotomy, impressed me very favourably. This first case and one other I venture to describe in detail. The first one is reported in the *British Gynæcological Journal* for August 1897, as follows:—It was one of ovarian fibroid in a young woman aged 22, unmarried, a patient of Dr. Shillito, of Handsworth. She had suffered from the most intense pain at her menstrual periods for nearly a year, pain unrelievable by any form of treatment. On examining her, I found a small hard mass in the pouch of Douglas, adherent to the back of the broad ligament and side of the uterus, from which it could easily be distinguished bimanually. The uterus was retroflexed. I thought that the lump was an adherent cystic ovary, and I decided to expose it by vaginal cœliotomy, ignipuncture it, and return it to its place, and finally to do a vaginal fixation, thus relieving her without placing her under the necessity of wearing a belt.

Operation on May 15th, 1896, her doctor being present. I found after bringing the fundus of the uterus into the vagina, the right ovary was larger than I had anticipated, larger than a tangerine orange, very hard and adherent. It was impossible to bring it into the vagina while the opening was so largely blocked up by the body of the uterus. I separated the adhesions as much as I could, returned the uterus into the abdomen, and while my assistant pushed it away to the left side I managed to pull the ovarian fibroid into the vagina, and remove it after ligaturing the pedicle. I completed the operation by vagino-fixation. She is now at her work, free from pain and under no necessity of wearing a belt.

The other case I wish to report in full is that of Mrs. W., age 25 years, of King's Heath, married 3½ years. History of old gonorrhœa and for three years constant pain in the lower part of the abdomen, so much aggravated at the menstrual periods that she was unable to do her housework. To the left of the uterus could be felt a mass filling up the left posterior quarter of the pelvis and extending well into Douglas' pouch. Acutely tender to the touch. On January 23rd, 1897, I performed vaginal cœliotomy—posterior, not anterior as in the first case—and removed a hydrosalpinx and a rather large cystic adherent ovary from the left side. The right appendages were normal, so I left them alone. She still has some slight pain at her menstrual periods, but only then, and not enough to incapacitate her from work. I would submit that this is a case where you gain a distinct advantage by the vaginal route. We must remember that a woman who has to do her own housework, or other work by which the means of living are earned, demands, and rightly so, when she is laid up, that she shall be cured completely and in as short a time as possible—in fact we have to act upon the old injunction *curare*, *cito*, *tuto et jucunde*, and I maintain that these three conditions are fulfilled by this method, far more so than by the abdominal route. The patient can get back to her work much sooner, and in my experience is better fitted to do it.

I have operated for diseased appendages by this route 15 times, this is exclusive of simple vaginal fixations and cases of pyosalpinx treated by vaginal incision and drainage.

The operations were performed in the following conditions:—

For ovarian fibroid - - - - - - -	1
For unilateral cystic adherent ovary with inflamed and adherent tube - - - - - -	2
For hydrosalpinx and cystic ovary - - -	1
For small ovarian cyst - - - - -	3
For tubal abortion and intraperitoneal hæmatocele	1
For separation of adherent appendages in Douglas' pouch - - - - - - - -	1
For shortening of the round ligaments - - -	1
For complete removal of double pyosalpinx - -	3

Twice I have subsequently had to open the abdomen—once in a largish multilocular cyst, the size of which I could not sufficiently reduce by tapping—and the second time in a case of tubal pregnancy, which I reported at our last meeting. I should not again attempt the removal of a large cyst by the vaginal route—at the same time I would insist upon it that if one fails in one's object by the vaginal route and has to resort to the abdominal, even then the patient is not one bit the worse off, and possibly even better off from the advantage of vaginal drainage.

The technique of the operation is fairly straightforward. With the patient in the lithotomy position, you first shave the vulva and thoroughly cleanse the exposed parts and the vagina, and I think you cannot do better than use lysol for this purpose. You then fix the uterus by pulling it down with vulsellum forceps, and with the scissors curved on the flat you make a transverse incision behind the cervix so as to open Douglas' pouch. Occasionally you open the pouch with the first cut of the scissors, but if not it is easy, with the finger kept close to the back of the uterus, to push on one side the intervening tissue and then catch hold of the peritoneum with forceps and open it. Make your opening free; with a small incision you will be able to do very little. Now pass two fingers of the right hand into Douglas' pouch, and by palpating with the left hand externally you are able to examine the appendages thoroughly, to separate adhesions, and to bring your diseased appendages down into the vagina. You get more room in which to work if, after introducing the fingers into Douglas' pouch, you remove the ball speculum. After having brought them down into the vagina you can ligature them and remove them. The technique must of course vary a little according to the disease for which the operation is done, *e.g.*, if a small ovarian cyst, it must be tapped and emptied before being pulled into the vagina. After removal I simply put a piece of iodoform gauze into the bottom of Douglas' pouch to act as a drain. This operation *may* take longer than the ordinary section; it is certainly more difficult of performance from the limited room which you have to work in, but when you see how easy the convalescence is you feel it worth all the trouble you have taken. The gauze I leave for four to six days before it is removed. The patient gets up about the twelfth day, and can go home in the third week.

I have already mentioned that my colleagues have operated by this route for diseases of the appendages, and on examining the records of the Women's Hospital at Sparkhill I find that in the last three or four years this operation has been done by them between thirty and forty times. I have excluded from this number all the cases of chronic diseases of the appendages with concurrent uterine disease for which vaginal hysterectomy or the vaginal radical operation has been performed. Their cases are of a very similar nature to my own, consisting chiefly of removal of appendages for chronic salpingo-oöphoritis, removal of small ovarian cystomata, removal of tubal pregnancies, and of conservative operations on the appendages. All the cases, my own and my colleagues, have made good recoveries. We are now able to see fairly clearly the cases suitable for operation by this route. I believe it is a valuable alternative route in cases of chronic diseases of the appendages which render the patients incapable of work and are so intractable to other forms of treatment that they demand operative interference in small cystomata of the ovaries, in cases favourable for conservative operations on the appendages followed or not, as the case may demand, by vagino-fixation; and finally, in some cases of tubal pregnancy in which intra-peritoneal abortion has taken place with the formation of a small intra-peritoneal hæmatocele.

The advantages which I think we may fairly claim for this route over the abdominal are, in suitable cases, as follows:—

1. It is safer.
2. The convalescence is infinitely easier and quicker.
3. There is no abdominal scar.
4. There is no necessity of wearing a belt for two years or more after the operation.
5. Drainage is from the lowest point.

First as to the safety of the operation. There is infinitely less exposure of the general peritoneal cavity, and therefore there must be a distinctly smaller risk of peritonitis. It is well recognised that the less the peritoneal cavity and the intestines are exposed the less is the chance of peritonitis, and I think we may claim that by this route there is hardly any exposure of the intestines, the greater portion of the work being done extra peritoneally. There has been no single death after one of these cases, and that fact alone speaks for itself. I grant you it is difficult to compare this with the mortality by the abdominal route, for in the mortality, *e. g.*, of removal of ovarian cystomata by the abdominal route, all the cases are included—large and small, non-adherent and adherent, non-suppurating and suppurating, therefore a comparison would be unfair in these cases.

Secondly the convalescence is easier and quicker. This I consider to be a very strong argument in favour of this route. There is no doubt whatever, and I think my colleagues will bear me out in this, that the patients have much less shock, and much less pain in these cases than in the abdominal. They usually recover as easily almost as cases of curetting. In a very few days they are anxious to get up. The absence of shock is easily accounted for by the almost non-exposure of the peritoneal cavity. The diminution of the pain I cannot explain so easily. There is no doubt that many cases of abdominal section recover without any pain to speak of, especially cases in which the operation has been done for the removal of large or very tense cysts which caused great pain, *e. g.*, ovarian cysts with a twisted pedicle. But what I can never quite understand is why the removal of appendages for a myoma through a small abdominal incision, appendages which are not at all adherent, should so often be followed for some hours, or even a day or two, by intense pain. Whatever the cause may be there is no doubt that in the operations by the vaginal route, even when strong adhesions have to be broken down, there is very little pain during the convalescent period. The sickness is less, and when it does occur, as it will do after anæsthesia sometimes, it is much less painful.

Thirdly, there is no abdominal scar. Perhaps some of you may say that a small abdominal scar is no disadvantage, or at any rate a very slight one. Whether it is a discomfort or not depends largely on how well and quickly the incision has healed.

I grant that with our methods for getting complete asepsis during an operation stitch abscesses are rare. They will however occasionally happen, and probably always will in a small percentage of cases. When they do they are very troublesome and may lead to the presence of a weak spot in the abdominal scar. In stout women especially I would emphasize the advantage of not incising the abdominal wall if possible; you have just as much room per vaginam in a stout woman as in a thin one. Then again many women have a horror of having the abdomen opened and would sooner go on suffering than submit to an abdominal section. Two of my own cases, the case of hydrosalpinx and the case of tubal pregnancy begged of me to relieve them if I could by the vaginal route and not to open the abdomen from above the pubes. I consider it most fortunate that cases of the nature I have indicated can be cured without having to incise the abdominal wall.

The fourth advantage rises out of the third—if no scar, then no belt. Is the wearing of a belt a disadvantage? I know some women do not mind it a bit, we all know of women who think that the wearing of a belt will cure them of all their bodily ailments. To a large number of women, however, it is a very great nuisance, especially so in the hot months of summer. I hope that with strict attention to the approximation of the tendinous fascia of the linea alba in suturing the abdominal incision we shall not have to insist so much or for so long on the wearing of a belt as a preventive of hernia of the scar. This is not common, but it occurs sufficiently often to prevent us forgetting the possibility of it and the drawbacks of it. It occurs most often in the class of women who get umbilical hernia, short stout women, in whom any carelessness in the wearing of the belt during the first few months after operation may lead to the formation of a hernia. You avoid the possibility of this in adopting the vaginal route. The great preventive of hernia though is absolute primary union without any suppuration. The use of a drainage tube in the abdominal operation prevents absolute primary union and is a frequent cause of hernia. In all cases therefore requiring drainage, would it not be a better procedure to carry the drain through into the vagina? Here drainage is helped by gravity, the site of the incision is the site of drainage.

I have now presented the advantages, and in doing so I hope I have really been right, and have not merely attempted to make something right.

The disadvantages are, I must confess, many, but they chiefly become apparent when you try to do more by this route than is possible. In other words, the cases are limited in number in which this route can be adopted favourably. This operation can only be done successfully in the case of small tumours or such as can be rendered small by the evacuation of their contents; and personally I should not advise it in chronic intractable disease of the appendages unless the swelling distinctly encroaches on Douglas' pouch and is not very large. This much, however, is in its favour, that in the majority of tubal cases the swollen, dilated, and tortuous tube is in Douglas' pouch.

The other disadvantages I divide into apparent and real. The apparent disadvantages, some of which will probably be urged against it, are—

1. You are working in the dark.

2. You cannot separate adhesions so easily as by the abdominal route.

3. You cannot, in case of slipping of the ligature, control the hæmorrhage so easily.

Firstly, as regards the working in the dark. This is quite a mistake. Unless your tumour is a large one—which you ought not to attempt to remove by this route, you can see quite as clearly what you are doing as in similar cases operated upon by the abdominal route. Any of you who have seen diseased appendages or small cystomata removed through the abdomen, know quite well that after the incision is made and the operator has introduced two fingers into the abdomen, nothing further is seen till the appendages or the cyst are pulled through the incision. All the work of separating adhesions is done by the sense of touch. Though you cannot see all that you are doing by the vaginal route, yet you can see quite as much and in some cases more than you can in operating on similar cases by the abdomen, and your sense of touch is the same.

Secondly, that you cannot separate adhesions easily is after all a relative statement. If your swelling is not too large to remove per vaginam, you can easily reach all over it with two fingers in Douglas' pouch, and working bimanually with the other hand above the pubes. Adhesions to bowel so strong as to endanger its wall by their separation are very rarely found except in long standing cases of pyosalpinx; of these I am not speaking to-night. Grant, however, that you have difficulty in separating the adhesions from the top of the swelling, and you cannot reach far enough with your fingers to separate them, you will be able to complete the operation by the abdomen in a very few minutes, the most difficult part of the work having been done. This, however, I feel certain, will very, *very* rarely be necessary.

The last apparent objection was that in case of slipping of the ligature you cannot so easily control the hæmorrhage. I put this in the apparent objections because I would ask, how often does the ligature slip? Very, very seldom. And is it more likely to slip in cases operated on per vaginam than in cases operated on per abdomen? Possibly it is, as you are limited for room, but you can always leave a clamp on the pedicle if you have any doubt about the security of your ligature. The real disadvantage is, I think, the small number of cases in which it is applicable. I only wish we could operate on all cases by this route.

The operation is very difficult of performance when the vagina is not capacious, and in a nulliparous woman it may be almost if not quite impossible. Even in these cases, though, you can do something. One of my cases of cystoma was in a lady at Handsworth, who had been married some years, longed for a child but had never had one. She had a right ovarian cystoma as large as my fist, no adhesions. After opening

Douglas' pouch I evacuated the cyst contents and pulled it into the vagina. The vagina was so narrow that I could not pull the ligature as tightly as I liked, so for safety's sake left a pair of forceps on the pedicle for forty-eight hours. She recovered easily, and now, seven months after the operation, she is pregnant.

In deciding on the performance of this operation one must take all the circumstances into account and judge each case on its merits; and lastly, there is one point we must decide upon for each case, and that is whether we shall adopt the anterior or the posterior opening. If in any case it is advisable to perform a vagino-fixation after operating on diseased appendages, then the anterior opening is necessary, but in the majority of cases the posterior opening is the better. You cannot secure drainage by the anterior, the body of the uterus lying directly over your incision and blocking it up.

In conclusion I would say that I have brought this question up to-night as it is to my mind not only worthy of the attention of everyone, but is essentially one which is open to discussion.

A NOTE ON SULPHATE OF SPARTEIN.

BY PAUL M. CHAPMAN, M.D. LOND., F.R.C.P.
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THE student, and still more, the faithful practitioner seeking intelligently to apply the results of physiological experiment to a suffering humanity, may well be bewildered by the many conflicting statements made with regard to the action of heart stimulants, and of diuretics. It is with the most praiseworthy intention of doing the least possible harm, that the less known remedies are the less used. But even as we are open to the reproach of only having one sauce indifferently for both vegetables and puddings, so, as I have elsewhere said, we have only one cardiac tonic for all lesions without discrimination. We are all creatures of habit, and the word "digitalis" is with most of us an invariable connotation of the word "bruit."

To some extent this necessarily follows from the absence of clinical observations to strengthen and extend the suggestions of the laboratory. Laboratory observations would themselves also, be more fruitful of suggestion were they not necessarily limited to their point of view, which rarely takes in the whole problem of the circulation in health, much less in sickness. Sometimes, indeed, the observations are not extended so far as to include mammalia.

A clinical study should habitually take into review:—

1. The quantity, positive or negative, of the mass of blood as a whole.

2. The position of this mass relatively to the arterial and venous systems.

3. The quality of the blood itself.

4. The calibre of the vessels, their rigidity, thickness, elasticity, their varying distensibility.

5. The tint of skin, and how this varies under pressure; also (*a*) plethora and fulness of skin, or (*b*) pallor, shrinking, and collapse.

6. The causation and meaning (and these may be very difficult problems) of a rapid or of a slow pulse.

7. Add to these manifold considerations that of œdema and the reasons affecting its presence or absence; the amount of the secretions and of the excretions generally, not only that of the urine; and we have a very pretty problem, varying with each case, capable of infinite combinations and permutations, and more than sufficient for the exercise of all our faculties and knowledge. A special delight in these problems, and an intense concentration upon them, undoubtedly assist towards successful treatment. Afterwards, it is often most difficult to state, in any clear form likely to be helpful to others, the exact clinical conditions which should guide them, or even ourselves, in future.

We may take it that most of the ordinary forms of mitral incompetency, with venous congestion, and more particularly those cases characterised by irregularity of the heart's action, are benefited by digitalis. Speaking generally it is contraindicated when there is high intra-arterial tension, and also when the arteries are rigid, undistensible, and brittle. The points involved are pretty clear, and it is not of these that there is much further discussion necessary.

I am, however, convinced that another class of cases is badly treated by otherwise good and even excellent medical men. These are cases in which little by little some residual blood has been accumulating in the heart owing to weakness of heart wall and insufficient contraction. At first not quite emptied during systole, lastly scarcely half emptied, the vessels dilate. Dilatation to an amazing extent has come under my notice, brought about in this way, either with no mitral incompetency or with a mitral incompetency ***directly dependent upon and secondary to the dilatation.***

This statement may not seem to be particularly interesting, but from a long experience I am prepared to say that (1) there is no condition less recognised than pure cardiac dilatation, and (2) that nowadays when digitalis and perhaps strophanthus, perhaps also Nauheim baths, have failed, the ordinary medical practitioner is at the end of his resources.

I therefore think that when one has seen certain cases which have responded to no other treatment, raised from an apparently dying state as by a miracle, the nature of such cases, and their appropriate treatment, should be recorded as far as may be possible.

In any medical observations on the clinical uses of a drug it is better to regard as far as possible symptoms and their experimental relief rather than theory and physiological experiment. While my later remarks will be purely clinical and treated from a practical standpoint, it will be as well, however, to recall certain physiological facts to memory.

As long ago as 1873 (*Archiv fur exper. Path. u. Therap.*) Fick arrived at the experimental conclusion—1. That spartein in small doses suspended the electric excitability of the vagus.

2. In larger doses, neither by the use of muscarin nor by any other means, could a diastolic action of the heart be produced. 3. If a fatal dose was given death was dependent upon paralysis of the respiratory centres; by artificial respirations life might be prolonged for some time. 4. It acted both as a hydragogue and as a diuretic.

With regard to statement 4, Bradford found experimentally on the exposed kidney that the flow of urine was considerably diminished. He and other observers state that it heightened arterial tension. Stenhouse believed that the diuretic action of scoparius was due not to spartein but to scoparin, an allied alkaloid found therein.

In conjunction with these statements it is well to recall a fact not sufficiently brought to the notice of and impressed upon medical men. This is, that according to the experiments of Gaskell (*Journal of Physiology*, 7, S. 50, 1885) the vagus is not only an inhibitory nerve, but that the very nature of the inhibition is concerned with the fact that it is a trophic nutrient nerve. This is confirmed by many other observers. Section of the right vagus, for instance, leading to degeneration of the middle two-thirds of the septum of the two large papillary muscles; section of the left leading to degeneration chiefly in the region of the heart's apex.

Having thus briefly and superficially referred to these physiological points let them be quite dismissed from the mind, and let us look on the clinical action of spartein as a heart tonic, or, if the phrase is less objectionable, as a heart stimulant, it being one of those drugs with which, after a lethal dose, the heart is found contracted in systole.

I have now used spartein largely for some years, at first with much care and doubt, latterly more boldly and confidently as its uses seemed to grow apparent to me. For ordinary mitral disease with venous congestion, and especially when the ordinary train of symptoms is, as is usual, accompanied with irregularity of the heart's action, I still think no drug is comparable with digitalis. For some kinds of tumultuous action aconite and morphia and other drugs remain priceless. But for the condition known as passive dilatation, owing to the slow and gradual accumulation of residual blood, especially without marked valvular lesion, I have come to think spartein an incomparable drug, and to wonder what I should do without it.

Without entering into long details of cases, which might confuse the issue, I think it is possible to give a clear idea of the kind of cases in which spartein may be very usefully employed.

In June last, I was called to London to see the relative of some friends, supposed to be suffering from some obscure form of thoracic disease. Several most competent and well known physicians had seen him, one expressing an opinion that his heart was displaced by a tumour, probably an aneurism. There was no cardiac bruit. I found the patient propped up, and hanging forwards in a chair, with his legs raised and very œdematous. He was barely conscious, the lower lip swelled and drooping, and saliva dripping from the side of the mouth. He could scarcely raise his eyelids at all, and they had to be lifted up to look at the pupils. The breathing was in catching gasps with long pauses, and the scarcely perceptible pulse rate was 130. To all appearances he could not live through the night. I could detect no cardiac bruit, but found that there was an enormously dilated right ventricle, two inches to the right side of the sternum and well down into the epigastrium. The blood vessels almost everywhere were atheromatous, and hard like gas pipes. There was well marked arcus senilis though the patient was under fifty. He had had digitalis given him. I gave him 20 mms. of perchloride of iron tincture with ½ a grain of sulphate of spartein every four hours. The improvement began almost at once. In two days he was sitting at the window, interesting himself in the passing traffic. Eventually the heart's apex was felt beating comfortably in the 5th interspace inside the nipple line. He went out for drives. Came down to Hereford for a month or two. Walked about the town and into the market. In October he left for town, where he had an attack of bronchitis. Finally he sailed for his home in America, but unfortunately died somewhat suddenly at sea on the way thither. That he should not only return to life for a time, but also to the enjoyment of life, seemed almost miraculous. I should say that I was unable to discontinue his spartein during the whole time he was under my care, yet I never had to increase his dose. He took digitalis for a little while before sailing, after he left me; and, in view of his hard arteries, I thought this was a little indiscreet, but I cannot say whether this affected him adversely. Numberless minor cases have, as far as they were capable, shown the same striking results; some, happily, more permanent. I find, however, that it is difficult to discontinue the drug. Long continuance, nevertheless, does not do any harm, and the patients seem to live upon it. No increase of dose is necessary. I have a patient still under my care who has taken ½ a grain of the sulphate for nearly a year. His chief trouble was intense dyspnœa, which has practically disappeared except when walking very fast. He has a slight systolic aortic bruit, but no mitral disease. His, like the other case I have quoted, was mainly passive dilatation from accumulation of residual blood.

Only the other day a case occurred, in its way as striking as any. The man was in middle age, with dilated heart, but no bruit. He was expectorating bloody mucus, breathing in gasps, and only kept alive by the assiduous inhalation of oxygen. He had 1 grain of spartein sulphate every four hours, and in twenty-four hours was able to discontinue his oxygen altogether. The relief of the dyspnœa in nearly all the cases I have treated is perhaps the first and most striking result, as it certainly is the most pleasing. The patient in a week went out in a Bath chair. Unfortunately the bloody expectoration, which at first had been greatly relieved, returned. I saw him a second time and found him but for this improved in every way. Oxygen never had to be resorted to from the time that the spartein first acted. Unfortunately the patient died two nights afterwards of sudden syncope. He was bled slightly at my second visit, with much temporary relief.

To sum up, I am confident that in certain selected cases, chiefly those characterised by a cardiac dilation, arising as far as can be ascertained by the gradual accumulation of residual blood, we have in sulphate of spartein a most valuable drug, which is worthy of far greater attention than it ordinarily receives. The dose of ½ a grain every four hours is usually sufficient, but one grain may be given as frequently, and I dare say even a larger dose, with perfect safety. In all cases I have noticed a slight purgative action, and in most an increase of urine, so that it may very properly be called a mild hydragogue diuretic.

ABSTRACT.

SOME FACTS IN THE NATURAL HISTORY OF CANCER.

THE appearance of the Report of the Cancer Committee in the April number of the *Birmingham Medical Review* anticipated by a few days the issue of a special "Cancer Number" of the *Practitioner.* This is a collection of some very interesting and instructive papers dealing with different aspects of the great Cancer question. Thinking that many of our readers would like to follow up the subject we have abstracted some of them.

Dr. Roswell Park, Professor of Surgery in the University of Buffalo, and Director of the State Pathological Laboratory, takes up the question of the Frequency and Nature of Cancer. Thus, an explanation frequently given to account for the increased returns of death from cancer is that cases are now diagnosed as such which some years ago would have been considered as due to some other disease. Dr. Park is rather inclined to think that the tendency is often the other way, that cases are looked upon as malignant which are in reality inflammatory or syphilitic, and that many such creep into statistics; but notwithstanding this he considers that cancer is very much more frequent than formerly, and "is now the only disease which is steadily on the increase. . . Thus, for instance, in 1887 there were in New York State 2,363 deaths from cancer and 11,609 from consumption. In 1898 there were 4,456 deaths from cancer and only 12.552 from consumption. . . . In none of the other diseases tabulated by the State Board of Health, nor in any Government reports, has there been such an immense increase as in cancer. . . If for the next ten years the relative death rates are maintained, we shall find that ten years from now, viz., in 1909, there will be more deaths in New York State from cancer than from consumption, small-pox, and typhoid fever combined." Dr. Park gives some very interesting instances of regional prevalence for cancer. He quotes Behla as showing in the town of Luckau, in Germany, there have been within the past twenty-three years seventy-three deaths from cancer in one small locality, as many as four being in one house. The writer in this paper also enters into the question of causation. He believes that the idea of there being some special stimulus is correct. "The exact character of this stimulus is not yet certainly demonstrated, though things point more and more towards its parasitic, *i. e.*, its potent, living influence."

Analogies are not wanting between cancer and other diseases, and would almost of themselves suggest some parasitic origin apart from histological and experimental observation. "If cancer be an infection, it must be acknowledged that, as a rule, it is exceedingly slow. This, however, does not prevent us from accepting such diseases as syphilis, leprosy, and others, as in their essential nature parasitic. . . . No valid argument, therefore, can be made against the infectious nature of cancer, based simply on the time-limit." As to injury as a cause of cancer, the writer does not feel inclined to attribute much importance to traumatism, although he admits that a person may suffer injury to a part and shortly after show evidence of malignant growth in the injured region. The same is not uncommon in the case of tubercular joints, and yet no one would now look upon traumatism as other than a preparation of the tissues for the invasion of the specific organism. The question of a specific organism is discussed, and the writer in speaking of the difficulty of discovering the organism in cancer and other diseases such as syphilis, which all consider as parasitic, refers to a fact demonstrated by Orth that bacteria in some instances can pass through certain tissues and go to rest in others at a considerable distance from their point of entry and yet without leaving evidence of their passage. The author of this paper considers that future work in this direction must be on the lines of inoculation whether from animal to animal or from dead human subject to living animals, and he considers that what little has already been done is such as to promise most important results if done on more extensive lines.

Several very interesting examples of accidental inoculation are given. For instance, a case is quoted which occurred in the practice of Sippel, in which cancer inoculation took place along the sutured tracks after extirpating a cancerous ovary; "and a New York surgeon had, some time ago, a case where cancer developed along the lines of incision made for relieving tension in the endeavour to close a large wound made by removing a cancerous breast, these incisions having been made with the same knife used for operating upon the primary tumour. Indeed, one of the most eminent of my surgical friends has told me quite recently that he never will use the same knife for cleaning out the axilla which he has used in removing a cancerous breast." There is quoted the experiment of Langenbeck, who made a watery emulsion of a soft cancer, filtered, and having mixed in the defibrinated blood of a dog, then injected it into the femoral vein of another dog. In about two months' time nodules were discovered in the lungs of the injected dog having the histological characters of the original growth. Various cases of inoculation of man to animals are mentioned, but as these appeared elsewhere we need not refer to them, while some even more interesting cases of infection from animals to man are given. It is well known that fish are frequently infected with parasitic tumours, and Bosc gives an interesting account of a youth who in eating a raw trout had a perforation of the tongue by a bone. He extracted a small portion, but some remained in the wound, which continued in a state of irritation for a fortnight, when it was also removed. Very shortly after a typical epithelioma grew at the site of the injury, and from which the patient died in about a year. Many other cases equally interesting are related which collectively form valuable evidence in support of a possible contagiousness of cancer.

We constantly hear the remark made by the laity as well as the profession that cancer seems to be on the increase. This question, the statistics of which have been carefully compiled, has been examined with great care by Dr. Newsholme,* In the five years 1891–95 cancer was responsible for 712 deaths per million of the population, while in 1896 for 764. This is probably under rather than over the number, and the writer goes on to say that with the exception of bronchitis, pneumonia, and phthisis, cancer causes more deaths every year than any other single disease, and "on the basis of the figures for 1896, one out of every fourteen men and one out of every nine women reaching the age of 35 years eventually die of cancer." We are of course met with a certain difficulty at the very beginning of any attempt to collect statistics owing to the fact that official reports include all forms of malignant disease, and there seems a likelihood that this difficulty will continue. The writer quotes a paper by Dr. J. F. Payne, who states that the apparent increase in cancer mortality is due to the "greatly diminished mortality from phthisis and from infectious disease. Since both these causes of death act much earlier in life than cancer in proportion as they carry off a small number of persons at earlier ages, a larger number will survive, so as to be the victims of cancer at a later period of life." † Dr. Newsholme, however, shows that we have still to consider the prevalence of cancer among patients who have reached a later period of life, and he asks the question, "Is the number of survivors to 'cancer ages' so much greater in recent years as to explain the increase in the cancer death-rate? and, if not, what proportion can be thus explained?"

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* *The Practitioner*, April, 1899.

† Proceedings Life Assurance Medical Officers' Association, May, 1897.

In 1881–90 the average death-rate from cancer of males aged 25 years and upwards was 9·49 per 1,000; in 1871–80 it was 6·97 per 1,000 of the population aged 25 and upwards. On page 8 of the last Decennial Supplement of the Registrar-General we learn that out of every million living at all ages the number of males aged 25 and upwards was 214,644 in 1881–90, as compared with 214,566 in 1871-80. There is obviously nothing here to account for the great increase in the registered mortality from cancer. The adult population out of every million living at all ages was practically identical in the two decennia, and yet the death-rate among males aged 25 and upwards increased, as we have seen, from 6·97 to 9·49 per 1,000.

"The same problem may be approached from the standpoint of the life-table. In a life-table a million infants are supposed to be traced through life until all are dead. A million male infants have thus been traced, in accordance with the mortality experience of 1871-80 and 1881-90 respectively. The English life-table shows that out of a million male children born there are surviving in the former period at the age of twenty-five years 657,077 as compared with 693,809 in the latter period. Consequently the deaths from cancer in 1871-80, at ages over twenty-five, among males, which were 36,410, must be increased in the proportion $\frac{693{,}809}{657{,}077}$. This brings the death-rate from cancer in 1871-80 at ages over twenty-five up to 7·36 instead of 6·97 per 1,000; and the increase of 2·50 per 1,000 at ages over twenty-five, in the period 1881-90, becomes reduced to 2·11 per 1,000. It is evident, therefore, that the apparently simple arithmetical explanation of the increase in cancer mortality, given by Dr. Poore and others, only accounts for a small portion of the total registered increase. This small error, caused by the greater number of survivals to high ages in recent years, can be eliminated by stating the cancer death-rate separately at each age-period."

The same writer gives some details as to *Cancer mortality according to locality* which are interesting, although of course the question is not approached from the same point of view as is being done by the Cancer Committee. Thus, according to the last decennial supplement of the Registrar-General for the years 1881-90, calculated by the corrected method, "the average annual death-rate of a standard million above thirty-five years of age in England and Wales was 1,844." Taking only the counties, the highest cancer death-rates were—in Huntingdonshire, 2,157; Cambridgeshire, 2,012; Sussex, 1,999; Warwickshire, 1,976; Monmouthshire, 1,574; Dorsetshire and Buckinghamshire, 1,578; Derbyshire, 1,597; Wiltshire, 1,604; Cornwall, 1,630. The writer next touches on the question of "*cancer houses*," and he states that "the fact that several successive families living in a house have each had members suffering in this house from cancer does not necessarily prove any causative relationship between the condition of the house or of the soil on which it is built and the origin of the disease. Observations of considerable magnitude, making all necessary corrections for age-distribution of population would be required to give a *prima facie* case to establish a high degree of probability for the contention that there are special '*cancer-houses*'; and such observations as have hitherto been published do not carry conviction to my mind."

In answer to the question—*Has there been any real increase of cancer mortality?* Dr. Newsholme points out that the Registrar-General's figures only represent *certified causes of death*, and not necessarily actual facts Registration was commenced in 1839, before which of course statistics did not exist. Now each year returns are more accurately made, but still we are not sufficiently removed from the influence of the early methods of certifying death to enable us to compare with any degree of accuracy figures extending over a sufficiently long period. For instance, if we were to take certified causes of death only, we should find on the same lines "that the number of persons who annually die of old age has enormously declined, because deaths formerly returned as simply 'old age' now appear under various nervous, circulatory, digestive, or other diseases (including cancer)."

The following statement in tabular form, given by the writer, is interesting:—

	Deaths in England and Wales in the three years,	
	1866-68.	1894-96.
Deaths from indefinite causes	143,472	68,650
Deaths from cancer...	25,567	67,888
Annual death-rate per million living from indefinite causes	2,206	766
Ditto from cancer	393	744

Another fact is pointed out in this interesting paper, that, taking figures alone, there seems to be a *greater increase of cancer mortality among males.* In the years 1881–91 inclusive, "the registered increase of mortality from cancer was 69 per cent. among males and 28 per cent. among females." These figures seem to show that increased care in diagnosis, with possibly more frequent autopsies, have considerably affected the figures, for there are no grounds for supposing that cancer affects males more frequently now than females, and were there an actual increase in cancer the ratio for the two sexes might be expected to be very much the same. This is the idea to be gathered from the experience of the Scottish Widows' Fund Office. The writer in conclusion says that what statistical data we have at hand support the idea that cancer mortality has increased; in fact, they go largely to show that greater numbers of registered deaths from cancer are due to more accurate diagnosis and careful certification, though, of course, absolute proof is impossible.

The subject of the medical geography of cancer in England and Wales is continued by Mr. Alfred Haviland who, as long ago as 1868, had investigated this subject in a paper dealing with the prevalence of cancer among females for the ten years 1851-60, in which geographical distribution had been mapped out. He had divided the country according to cancer mortality, showing a low amount of mortality prevalence in a district including nearly the whole of Wales and the North-west portion of England. The geological formations of this district are the Silurian and Carboniferous, and constitute some of the highest and best drained mountainous districts in the country. The next district also with a low mortality extends north from the Isle of Wight, through Hampshire, part of Wiltshire, where the river Kennet rises, northward again to the Cotswold Hills in Gloucestershire, and then east through Oxfordshire and neighbouring counties. This includes the chalk hills of Hampshire, Wilts, Oxford, Buckinghamshire, Bedfordshire, Cambridgeshire, Suffolk and Norfolk, and is flanked to the west and north-west by the Oölitic limestone series of Gloucestershire, Oxfordshire, and Northamptonshire. The high mortality districts, instead of occupying elevated portions of the country generally seem to surround the great rivers after their full formation, and they are also districts which are liable to floods, and they are as a rule of later formation. " For instance, the cancer field of the Thames which is almost co-extensive with that large tract of the lower Eocene called the London Clay; the east Yorkshire field, which is traversed by the large rivers forming the Humber—a district we know to abound in alluvium and the recent deposits of the overflowings of its different great rivers."

Through Gloucestershire, Worcestershire, and Shropshire, the high mortality groups follow the course of the river Severn on its western side, and this group is continuous with the Herefordshire field, which is traversed by the Wye and its tributaries.

The Stour of Dorsetshire and the Avon of Wiltshire traverse on the west the high mortality districts of Blandford, Sturminster and Shaftesbury, and on the east those of Ringwood, Fordingbridge, Alderbury, and Wilton.

The low-lying Tone runs through the centre of the Taunton district, and the great Mid-Devon field comprehends the Taw, the Exe, the Tamar, and the Dart.

It will be thus seen that the cancer-fields of England are to be found in the sheltered and low-lying vales traversed by *fully-formed* rivers, and having sites liable to floods, and composed of the more recent geological formations, in which clays of different ages predominate.

The author's conclusions, as shown by the first paper, are best summed up in his own words as follows:—

1. The districts having the *highest death-rates* from cancer among females were invariably associated with seasonally flooded areas traversed by, or in close propinquity to, fully formed rivers.

2. Geologically, these *high* mortality districts were characterised by alluvium and subsoils of clay of every variety of age and formation.

3. The districts having the *lowest* death-rates from cancer were situated on elevated land, where the drainage was good, and the physical features of the country such as to preclude the possibility of floods, where rivers derived their sources, and where, in fact, they were not fully formed.

4 Geologically, these *low* mortality districts were characterised by the oldest palaeozoic rocks, especially those of the carboniferous limestone period; the liassic, oölitic, and cretaceous limestones.

In the second portion of this paper Mr. Haviland compares his former results with data subsequently collected, and he finds the death-rate from cancer has risen considerably.

Cancer and "cancer-houses" form the subject of Mr. D'Arcy Power's contribution to this valuable collection of papers. This writer also deals with distribution in certain areas, more particularly a district consisting "of sixty square miles of a flat country which lies from 60 ft. to 100 ft. above sea level, consisting geologically of gravel overlying the boulder clay." It is described as well watered and bearing rank grass, with heather constituting dry veins in marshy land. The population is agricultural and scanty, and cancer seems to constitute the prevailing disease. Phthisis is common, so is insanity. Here the distribution of cancer seems to be endemic in certain spots and groups of buildings. The author found several cases of cancer in adjoining houses. He quotes four instances in which cancer occurred in adjoining cottages under the same roof, and in two instances in houses adjoining each other, but not under the same roof. In neighbouring houses, separated by the width of the street, seven cases of malignant disease occurred. The water supply in these instances was carefully inquired into. In some instances a single surface well supplied the cottages; in others each cottage had its own water supply. In another instance the water was brought from a distance, but they all seemed to suffer alike. "All ages and both sexes were attacked. . . . Rich and poor are dying alike of cancer, though there are no paupers." The writer gives some curious instances showing a sequence of cancer occurring in relatives and even those not related but inhabiting the same house. There are also cases of husband and wife suffering from the disease. Two brothers died of cancer of the rectum; the next generation consisted of two sisters, of whom the one died of cancer of the breast and the other of cancer of the tongue. A mother died of cancer of the breast, two of her daughters died of a similar disease, and the third of cancer of the uterus. A father died of cancer of the rectum and the mother of cancer of the uterus and breasts; the daughter has since died of cancer of the breast. In one or two cases the child has had malignant disease before the parent has shown any sign, though it has developed subsequently.

Mr. D'Arcy Power quotes Mr. Haviland's investigations with which he seems to fully concur. He next goes on to say that it is impossible to resist the conclusion that there is some connection between the marshy character of the ground and the cases of cancer just quoted; and he points out the curious fact that this portion of the country must have been very malarial, and he raises the question as to a possible relationship between malaria and cancer, as they seem to occur in inverse ratio in some cases, as in Jamaica and the East Coast of Africa, where cancer is rare, while in Holland both are common.

The contributions of Mr. Law Webb to the *Birmingham Medical Review* are quoted at length by Mr. D'Arcy Power, but as these investigations are already well known here in Birmingham we need not refer to them, but we may quote the concluding paragraph of this paper as giving the writer's ideas on the subject.

"I cannot help thinking that these cases raise a strong presumption in favour of cancer being an infective disease, to which some are much more susceptible than others. Locality seems to be a predominant factor, and the nature of the locality associated with cancer appears to be so characteristic that it is possible to say whether or not it is advisable for a patient with a well-marked family history of malignant disease to reside in a given spot. I do not think that the cause will be found in any given room or house or water supply, notwithstanding the curious instances which have been cited in this paper. It must be looked for much further afield, and it will almost certainly prove that there is some intermediate host whose chance of detection will increase or diminish with the care which is taken to examine the fauna and flora of the districts where cancer is most prevalent."

DOUGLAS STANLEY.

LITERARY NOTES.

THE Rebman Publishing Co.'s new books include the following: A Text-book of "Diseases of the Eye, Ear, Nose, and Throat," edited by Geo. E. De Schweinitz, M.D., and B. Alex. Randall, M.D., of Philadelphia, assisted by a large staff of collaborators. * A Text-book of "Obstetrics," by Barton Cooke Hirst, M.D.; * Gould's Year-book of "Medicine and Surgery," 1899 issue; Professors Val Valzah and Nisbet's new work on * "Diseases of the Stomach;" Prof. Keen's Monograph on * "The Surgical Complications and Sequels of Typhoid Fever:" a small work on

* "The Sanitation of British Troops in India," by Captain E. Carrick Freeman, R.A.M.C.; and new editions of Starr's * "Diseases of Children," * Baldy's "Gynæcology," and Vierordt's * "Medical Diagnosis."

The same firm will also shortly issue a "Text-book of Pathology," by Prof. Stengel, of Philadelphia; an entirely new "Pocket Medical Dictionary," edited by Dr. W. A. Newman Dorland, also of Philadelphia; an Atlas of "External Diseases of the Eye," by Prof. O. Haab (of Zurich), edited by G. E. De Schweinitz, M.D., being Vol. vi. in their "Hand Atlas" series; and Dr. J. P. Crozer-Griffiths' manual on "The Care of the Baby."

REPORTS OF SOCIETIES.

British Medical Association.

Birmingham and Midland Counties Branch.

Pathological and Clinical Section.

The Fifth Meeting of the Session was held in the Medical Institute, on Friday, March 24th, at 8 p.m., the President, Mr. Jordan Lloyd, in the Chair.

Embolism of the Central Artery of the Retina.—Mr. Eales showed a woman æt. 45, whose sight was defective in the right eye only. The FV was contracted to 5° from the fixing point, but $V = \frac{6}{6}$. With the ophthalmoscope the optic disc was very pale and atrophic, and the retinal artery very contracted; but there was an unusually large cilio-retinal artery running out to the Y.S. area. The history pointed to sudden failure of vision six years ago, vision having remained the same ever since. She had mitral systolic and pre-systolic murmur, and the apex beat was in the sixth interspace in the nipple line—her heart having been affected by rheumatic fever in 1873.

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* The works marked * have already been sent for notice in the *B. M. R.*

Mr. Eales considered the case to be one of embolism of the central artery of the retina, the Y.S. retaining its function in consequence of its free supply by the cilio-retinal artery before mentioned.

Peripheral Neuritis—Dr. Walter Jordan showed a child, aged 3, with paralysis of the right arm, which had been put down as a case of anterior poliomyelitis. That diagnosis he now withdrew in favour of peripheral neuritis. All the muscles of the shoulder and upper arm were flaccid and wasted; no movement of the shoulder or elbow at all was possible, but the wrist and fingers could be freely moved, and thus the child used its hand when the forearm lay on the table. The limb was slightly colder than that of the other side.

The history given was, that in September, 1898, the child had a sore throat, which "broke," with a discharge by the mouth. The next day there was complete paralysis of both arms and both legs; the child could not sit up. Improvement took place quickly. In a week the child began to use the left arm, in a month she could walk. For fourteen days she had no sensation in the right arm, being unable to feel pins stuck into it.

The child, as shown, could walk perfectly and use the left arm perfectly. The right arm was affected as stated; there was no loss of sensation in it. Both knee-jerks were absent.

Another point in the history was, that the day after birth the right arm was noticed to be very much thinner than the left. Until the present illness, however, the child was able to use it perfectly well in feeding herself, etc.

Although the condition of the throat was obviously not diphtheria, and although the paralysis followed the throat remarkably quickly, the conclusion reached was that the case was one of neuritis, following the affection of the throat, and damaging particularly a limb which had previously shown evidence of bad nutrition from some cause operating before birth. The loss of sensation and the continued absence of knee-jerks especially led to this diagnosis.

Injury and Shortening of Femur.—Mr. William Thomas showed a child aged 10 months whose right femur was considerably shorter than the left. The mother stated that when about two months old the child had fallen out of bed, that he cried continually afterwards, and always seemed to be in pain, and about two months later she noticed that the right leg was shorter than the left. Mr. Thomas suggested that the femur had been fractured by the fall a little above the epiphyses, and had not properly united. He pointed out a peculiar jerk which was visible and audible when the child straightened the leg. He also showed a skiagram of the legs, and contended that the difference in certain measurements supported the theory of fracture.

Electrical Stimulation of the Exposed Cortex Cerebri.—Mr. George Heaton read a note on a case in which he had applied electrical stimulation to the exposed motor area of the brain in a boy. The boy was aged eight years, and operation was undertaken for the relief of clonic convulsions with aphasia. His illness began at the beginning of December, 1898, with fever and gradual onset of aphasia with partial loss of consciousness. His convulsions apparently began with clonic contractions of the right side of the face and right upper extremity. The cortex cerebri was exposed over the left motor area. The dura mater was much thickened, and the pia mater was œdematous and its veins fuller than usual. A very weak Faradic current was employed, and was applied by means of electrodes of silver wire previously sterilised.

The following observations were made :—

1. Stimulation of the third frontal convolution in front of the præcentral sulcus caused no contraction.

2. Stimulation of that part of the ascending frontal convolution on a level with the lower limit of the fissure of Rolando caused elevation and retraction of the left angle of the mouth.

3. Stimulation of the corresponding portion of the ascending parietal convolution (immediately behind the lower limit of the fissure of Rolando) caused elevation and retraction of the (opposite) right angle of the mouth.

4. Stimulation of the ascending frontal convolution just opposite the knee of the fissure of Rolando caused elevation of both upper eyelids.

The chief feature of interest observed was the fact that in observation No. 2 a stimulation of the ascending frontal convolution at its lower end caused a contraction of muscles on the same side of the face. The stimulation was repeated several times by Mr. Gamgee, and always with the same effect.

Mr. Heaton laid stress on the ease and simplicity with which such electrical stimulation could be applied, and its harmlessness if only a weak current be used. It was frequently almost impossible when a small surface of the brain was exposed to recognise with any certainty the sulci and convolutions under the trephine aperture. In such cases electrical stimulation would prove of immense value in locating the particular part of the motor area which is actually exposed when that particular part of the brain is being operated upon.

Renal Calculus.—Mr. Jordan Lloyd showed a uric acid calculus, weighing nearly one ounce, removed from the right kidney of a lady about 60 years of age, by lumbar nephrectomy. The interesting features of the case were that she had suffered for many years, and had been told over and over again that she had no stone in the kidney. The urine always contained large quantities of uric acid crystals and but very few corpuscles of any kind. The large calculus was removed through a vertical incision in the kidney pelvis—an inch and a half in length, which was not sutured—and urine escaped from the lumbar wound only during the first thirty-six hours after the operation, the whole wound being soundly healed within a week.

Hydatid of Liver.—Mr. Smallwood Savage showed a liver with a large hydatid cyst, and with a marked hobnailed cirrhosis. The patient, aged 26 and unmarried, had five years ago severe epistaxis which lasted six months. Four years ago she had diarrhœa and jaundice, which came on gradually in the course of a fortnight and lasted five months, being under treatment in turn at the Hereford Infirmary and St. Thomas's Hospital.

Mr Savage saw her for the first time on 15th March, 1898, when he found that she had an enlarged liver of uniform and of fairly hard consistence, and that the dulness extended from the sixth rib in the right nipple line to about two inches below the level of the umbilicus. He also observed that she had large varicose veins in both legs and on the surface of the abdomen, and that she had piles and some ascitic fluid in the abdomen. When seen in October, 1898, the varicose veins were further exaggerated and inflamed and the liver was altered in shape, the note being that the liver dulness extended from the fifth rib to about three inches below the level of the umbilicus, or in extent 10½ inches in the right nipple line; that the dulness extended 3½ inches to the left of the middle line in the epigastrium, and that the lower edge, which was hard and rounder than normal, was felt within a finger's breadth of the crest at the anterior superior spine, and a hand's breadth at the posterior part of the crest. There was also noted a rounded prominence of the extent of one's palm situated in the epigastrium, which fluctuated, and further, by flicking this lump with one hand a thrill was transmitted to the other hand placed in the lower right intercostal spaces in the middle and posterior axillary lines. There was at the same time slight ascites, but no jaundice or œdema of legs.

The diagnosis of "hydatid" being made, Mr. Savage incised and drained the cyst by an incision in the epigastrium. The fluid so drawn off, and amounting to four pints, was of an olive-green colour, a specific gravity of 1010, a slightly alkaline reaction, but containing no albumen; microscopically hooklets were found.

The patient did well for ten days, when in consequence of the constant drain of a clear bilious fluid, the onset of vomiting and diarrhœa, and a slight evening temperature of 100°, she died of toxæmia at the end of three weeks.

Post mortem the liver was found to have turned through a quarter of a circle, the right lobe being lowermost and the left uppermost. The right lobe showed marked hobnailed cirrhosis, but the left and quadrate lobes were transformed into a hydatid cyst almost the size of one's head. The vessels at the porta of the liver were pressed upon.

Mr. Savage, in view of the absence of any obviously separate cause to account for the cirrhosis, mentioned how it might have been possible for the hydatid cyst to have caused a secondary cirrhosis.

Urinary Organs from a case of Impacted Calculus—Mr. George Heaton showed the urethra, bladder, and kidneys from a case of impacted urethral calculus which proved fatal from uræmia. The patient, a boy aged seven years, was admitted into hospital with urinary extravasation due to impaction of a uric acid calculus in the membranous urethra. The child died a few days after admission of uræmia. The kidneys, especially the right, were in a state of acute interstitial nephritis. The ureters were dilated The bladder much thickened and contracted. The calculus, after impaction, had set up ulceration of the urethra, and the stone lay in a cavity in the perinæum filled with putrid decomposing urine.

The Midland Medical Society.

The eighth meeting of the above Society was held on Wednesday, March the 15th, 1899, at the Medical Institute, Birmingham, the President, Dr. Lowe, being in the chair.

The following officers were nominated for election:—Dr. Rickards as President; Mr. Garner as Treasurer; Dr. Kauffmann and Mr. Christopher Martin as Secretaries; and Messrs. Bennett May, T. F. Chavasse, Jordan Lloyd, Henry Eales, and Mr. J W. Taylor as Members of Council.

Dr Nelson read a note on "Medical Book-keeping without Books," in which the miseries of the visiting lists, ledgers, and and bill-making were described, and the simplification of matters by the American card system, as organised by the Literary Bureau Company, was demonstrated.

Dr. Stacey Wilson read a paper on "The Treatment of Chorea."

Mr. Lawson Tait read a paper on "Ectopic Gestation."

KIDDERMINSTER MEDICAL SOCIETY.

Meeting held on 17th March, Mr. S. STRETTON in the chair.

It was unanimously resolved to confirm the resolution of the Liverpool Medical Institution with regard to vaccination.

Mr. J. Lionel Stretton showed :—

1. A calculus, removed by suprapubic lithotomy from a boy age 6 years. Although no sutures were used the wound was soundly healed in sixteen days.

2. An ovarian cyst, with twisted pedicle, removed from a woman, age 42. She was admitted with symptoms of intestinal obstruction, which dated from a strain three weeks previously. There were evident signs of acute peritonitis, and no extensive examination was possible. The cyst contained about a pint of fluid, and was jammed in the pelvis, obstructing the bowel. Degenerative changes had commenced in its wall, owing to the twist in the pedicle, and there was some general peritonitis. She progressed satisfactorily to the end of the third day, when she had a sudden attack of syncope, which proved fatal. No *post mortem* could be obtained, but an examination of the abdominal contents revealed nothing abnormal.

He read notes of the case of a girl, age 21, who was admitted with symptoms of acute peritonitis, dating from a strain two months previously. Her abdomen began to swell three weeks ago, and Mr. W. Moore, who attended her, found an inguinal hernia on each side; the right one was reduced, but the left one only partially. On opening the abdomen she was found to be suffering from extensive tubercular peritonitis, with considerable thickening and adhesion of the omentum, and nothing attributable to the herniæ, as was expected.

Dr. Evans read notes of a man, age 36, who was admitted with indefinite abdominal symptoms. The bowels, which had not been moved for a week, were relieved with an aperient, but he gradually became worse and died a fortnight after admission. *Post mortem*, the intestines were distended and congested and covered with flakes of lymph. The liver was immensely large and hard, and on section it was seen to be involved with a soft diffuse growth. Behind the stomach was a large glandular tumour (lympho-sarcoma) the size of a year-old child's head; it was firmly fixed to the spinal column and could not be removed. Chains of infected glands ran down each side. Dr. Evans commented upon the extreme rapidity of the growth and the indefinite symptoms accompanying it. The question of operation did not arise, as his condition after admission was too serious.

Mr. B. Addenbrooke read a paper on "Town cow byres and their influence on the number and variety of microbes in milk."

BRITISH ORTHOPÆDIC SOCIETY.

A meeting of this Society was held at the City Orthopædic Hospital on Friday, February 17th.

Mr. J. Jackson Clarke showed a case of severe congenital calcaneo-valgus. It was of the highest grade except in those cases in which there was defect of the fibula. He showed photographs of the condition before treatment by splints was begun. There was complete eversion and outward dislocation of the patella. This latter condition had been improved by manipulation, but there was still well-marked outward rotation of the leg at the knee, just as there was inward rotation in equino-varus. At the child's first visit the foot was so much everted and dorsal-flexed that it lay almost at the back of the leg. He believed that the final result would be good. There was no paralysis.

Mr. Tubby remarked on the external rotation at the knee, which was interesting as being the converse of what occurred in varus.

Mr. William Thomas denied that internal rotation of the leg was the rule in varus.

Mr. Muirhead Little showed two cases of supposed injury to the shoulder at birth, a boy aged 5 and a girl aged 8. In one there was a history of great difficulty in delivering the shoulders, and in the other instruments were used. Beyond this hearsay evidence no history was to be had. The boy had at first great inward rotation of the arm, and the movements of the shoulder were very limited. Under some months' treatment, by manipulations and massage, considerable improvement had taken place in the range of movement. There was some shortening in both cases, most marked in the girl, in whom also there had been suspicion of paralysis. Dr. James Taylor, however, had reported that there was only weakness and sluggishness of reaction.

Mr. Jackson Clarke said that he had had two similar cases, one of which he showed at the Clinical Society. He thought these were cases of sub acromial dislocation of the shoulder, as it was named by Smith, of Dublin.

Mr. Poland said he had carefully examined these two cases, and also that shown by Mr. Clarke at the Clinical Society. He quite agreed with Mr. Little that they were cases of injury to the upper end of the humerus. The cases that occurred during delivery were probably not purely traumatic, but possibly there was syphilitic epiphysitis. When seen early there was great swelling, which might end in suppuration, but most of them quieted down without pus formation. He had seen Mr. Jackson Clarke's case, which was in his opinion not one of traumatic separation, but there was disease of the joint itself, and the head of the bone was displaced from the glenoid cavity, which was not the case in Mr. Little's patients in whom also the joint was quite healthy.

Mr. William Thomas said that in labour there was a tendency for the attendant to hook his finger into the axilla and pull, and thus an injury might be produced. He thought no treatment beyond manipulations and massage was of any use in such cases as those shown.

Mr. Keetley said that he was not quite clear that the case of the little girl was one of traumatism. He remarked that Dr. Taylor found some deficiency of reaction to electricity, though not to any great extent. Although this was attributed to limitation of movement, he thought there was but very little limitation. They all knew that infantile paralysis in many cases got much better, so that he thought paralysis could be by no means excluded. It was not Erb's paralysis.

Mr. John Poland then showed a specimen of fractured neck of the femur removed by excision, from a man of 21, who had fallen eight feet on to his side. The symptoms were those mainly of coxa vara, except that very little flexion was possible. A skiagram showed the condition. There was a large amount of callus which hindered movement. He pointed out that the epiphyseal line was still well marked. After excision the man was actually quite straight, with little shortening, and in possession of a useful limb.

Mr. Thomas asked if union between the head and neck was out of the question. If the position could have been rectified, there would thus have been less shortening and a better joint.

Mr. Poland replying said that the bone had firmly united, but in a vicious position.

Mr. Poland also showed a specimen obtained by excision of a case of dislocation of the shoulder with separation of the greater tuberosity. He saw her some months after the accident, when, considering her age, 47, and alcoholism, etc., any attempt at reduction would have been dangerous, he therefore excised. Such cases were rare. She had a fairly useful arm now and was improving. Mr. Tubby asked whether there was broadening of the shoulder as stated in text-books. Mr. Poland replied in the negative. Museum specimens were rare.

Mr. Jackson Clarke referred to a case shown at the Medical Society that had been untreated for five weeks. The dislocation was extreme and had caused obliteration of the axillary artery and vein and great œdema of the limb. Treatment of dislocations needed improvement. If most cases were earlier recognised and treated the capsule could be opened and the separated portions of bone wired.

Mr. Poland then showed a cast of a case of Hallux Varus from a boy of 14, who had congenital club feet, but the placement of the toe had only appeared during the last years. There was a wasted condition and possible paraly He was inclined to excise the joint.

He also showed a cast of Hallux Valgus from obscure ca in a youth. The deformity was first noticed three or four ye ago. Believing that it was due to slight injury he excised a afterward divided the external tendon with a good result. T excised portion of bone was normal.

Mr. William Thomas showed a powerful and handy wren for the treatment of Talipes. He was convinced that wrenchi alone was not enough, and it caused great pain afterwards ; b what was possible by wrenching that tool would enable the to do.

Mr. Chisholm Williams showed a cast of a case of webbe fingers from burns. She had been operated on at the age two without much permanent benefit. He operated at the ag of seven with good result.

Mr. William Thomas said that he preferred to take a palma flap and fix it down on the dorsum, thus reversing Norton operation.

Mr. Keetley thought it would have been better to remove al the scars and cover the raw surface by a flap from the abdomen, as in the Italian method. Didot's plan and the use of silver wire and lead were obsolete. He cut straight down into the palm between the fingers, and closed the gaps by flaps as far as possible, and the rest by Thiersch's grafts.

Mr. Muirhead Little said that in webbed fingers the operation must be suited to each case. When the web was wide and thick he had tried a plan which he believed was new. He first split the web into a palmar and a dorsal portion. The palmar flap was divided vertically down the middle, and the dorsal one separated from the fingers at the sides and turned down into the palm. Then the two halves of the palmar flap wrapped round the sides of the phalanges ; any gaps were filled by Thiersch grafts. In the one suitable case that he had had the result was excellent.

Mr. Poland said that this case was a very difficult one, and he thought that Mr. Williams had done the best possible.

Mr. Keetley added that he knew no perfect method, and there was always some relapse.

Mr. Williams briefly replied, and then showed a case of progressive hypertrophy of the great and second toes on one foot in a girl of 4 years, noticed first three weeks after birth. The cast taken three months ago showed that the deformity was increasing.

Mr. Noble Smith thought it was a case of diffuse lipoma, a skiagram having shown no enlargement of bones. In such a case he had dissected out the fat with good result. In that case the bones felt large but were not so.

Mr. Jackson Clarke thought that diffuse osteoma could not be excluded.

Mr. Tubby and Mr. Poland thought in the present case that the bones were also enlarged.

Mr. Keetley showed a patient and also a skiagraph of her hip. He was in doubt, but thought it was a case of coxa vara. She was a girl of 19, but looked younger. The skiagram showed that the neck of the femur was curved and unduly horizontal. The most interesting thing was the expression of her face, which showed an openness or expansiveness that he had observed in another case of coxa vara from late rickets, of which he showed the photograph. She had been treated for very severe knock-knee by another surgeon by means of instruments, but had never been able to walk properly, and now could not walk at all. He thought it was a case of continuous rickets. He thought that probably the genu valgum was secondary to the coxa vara.

The meeting ended with a vote of thanks to the Committee of the Hospital for the use of the board room.

SOCIÉTÉ FRANÇAISE D'ELECTROTHÉRAPIE.

Séances des mois de Mars et Avril, 1899.

(Présidence de M. M. **Tripier** et **Doumer**.)

M. Leduc (de Nantes).—La galvanisation cérébrale. Le cerveau est accessible au courant galvanique, à condition d'employer des électrodes de grande surface, qu'on appliquera ainsi: l'électrode indifférente sera placée sur le dos ou sur l'épigastre: l'électrode active sera fixée sur le front.

On observe des effets polaires analogues à l'electrotonus des nerfs moteurs et sensoriels. La galvanisation négative détermine une augmentation de l'activité cérébrale, la galvanisation positive produit une diminution.

La galvanisation cérébrale négative a pour action régulière et constante de dissiper les effets du surmenage intellectuel, elle fait disparaître la fatigue cérébrale, rend les idées plus claires, le travail plus facile.

La galvanisation semble devoir être utile dans presque toutes les maladies cérébrales.

M. Andrieu (de Capdenac).—Note sur le traitement par l'électricité des phénomènes douloureux de la phase prémonitoire de l'ataxie locomotrice progressive.

M. Gaiffe présente un appareil faradique à bobine oscillante donnant des courants d'intervalle rythmiquement variable, système du Docteur Cruchot, modèle Gaiffe et Cie. Ce nouveau modèle se compose d'un appareil d'induction à chariot à bobines mobiles mues par un système de mouvement alternatif commandé par un moteur électrique. Les courants induits sont envoyés au malade suivant un rythme qui permet d'obtenir des contractions sans fatiguer les muscles et en laissant un intervalle de repos entre chaque excitation. Un système de rhéostat permet de varier la fréquence du rythme et la puissance du courant à son maximum.

M. Drault présente une machine statique genre Wimshurst à quatre plateaux pour radiographie.

REVIEWS.

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THE SURGICAL COMPLICATIONS AND SEQUELS OF TYPHOID FEVER.*

DR. KEEN has long been known as one who has given much attention to the subject of typhoid fever, and his Toner Lecture on the Surgical Complications and Sequels of the Continued Fevers, as well as the Shattuck Lecture, made a considerable mark at the time. Since these publications the author's attention has been still directed towards the very many sequels of typhoid fever, many of which are of great interest and importance. The present work, therefore, is based on Dr. Keen's previous writings, to which are added his subsequent investigations and experiences. The book deals with many complications of considerable rarity, and therefore only met with by those having exceptional opportunities for investigating enteric fever. Passing over the second chapter, which is rather of a purely pathological nature, and in which the various situations and forms in which the Eberth bacillus may be found, we may notice more particularly Chapter III., which deals with the subject of Typhoid Gangrene. This is an extremely rare result of the typhoid process, and many of the leading works on medicine, surgery, and pathology do not even refer to it. It of course does not include bed sores, which, though actually of a gangrenous nature, are not, properly speaking, the form of gangrene which the writer describes. The date of onset of this latter is never so late as the bone lesions, which may occur several months or even years after the attack of typhoid. The earliest recorded day, says the author, on which gangrene occurred is the fourteenth, and the latest is the seventh week, the most usual period being in the second and third weeks. During the earlier stages of the disease the general vitality of the patient and the resistance of the tissues are such that they can combat successfully the evil tendencies of the fever, but when the bacilli and their toxic products have become diffused, when excessive feebleness has followed the small amount of food taken and the exhaustion from the continued high temperature, the heart has become weak and the formation of thrombi is favoured not in the heart only but also in the vessels. This may be the result of arteritis or of thrombosis. Emboli thus frequently result, and thus it is not surprising that gangrene should occur. It has been conclusively shown that the Eberth bacillus occurs in the blood, on the endocardium, in the walls of the arteries, the walls of the veins in thrombi, and in perivascular tissues. It can be easily understood, therefore, how very many possibilities there are for the production of gangrene. The writer points out that the gangrene may be dry as arterial changes are marked, but occasionally the veins also become obstructed, when moist gangrene may rapidly supervene. Thus, obstruction of the circulation may be followed in typhoid by very severe results. Age does not seem to have much influence. The situation of gangrene varies extremely. The lower limbs are of course frequently affected, but there may be perineal, lingual, pharyngeal, or facial gangrene.

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*The Surgical Complications and Sequels of Typhoid Fever. By William W. Keen, M.D. London: Rebman Publishing Co. Limited.

As might be expected, the chapter on Intestinal Perforation and its Surgical Treatment is a long one, and the author on the whole speaks hopefully of the results, but he points out that the general conditions of the patient must be favourable, and the operation should take place as soon as possible. There is no hope of recovery if it is not done within twenty-four hours after perforation. Much also depends on whether the signs indicate general peritonitis or a local one.

The first thing is to find the perforation, by means of flushing the abdomen, which may best be done by the sterile salt solution. The author does not advise trimming the edges of the ulcer as it wastes time and tissue, except in cases where two perforations are contiguous, when it may be best to excise the portion. Should there be very wide destruction of tissue a portion of the bowel may be resected, and possibly an artificial anus established. The writer strongly advises independent ***mattress sutures***, "not only because, as Abbé found, they do not so readily tear the friable tissue, but because they shorten the operation, since there is but one knot to be tied for every two sutures." The author strongly advises against too vigorous searching for multiple or impending perforations, as the great point is to shorten the operation as much as possible, as this seems to result in fewer deaths. However, in every case before the abdomen is closed, the appendix should be sought for and examined It is not sufficiently kept in mind that the appendix is a frequent site of typhoid ulceration, and we find it stated under this head, that typhoid appendicitis is often present. Should this be the case removal is recommended. The author says that the abdomen should not be entirely closed and that drainage should be the rule.

One of the most interesting chapters in the book deals with affections of the Liver and Gall-bladder. Pylephlebitis may follow typhoid and be accompanied by abscesses in the liver. The author states that this is not a common sequence.*

Gall-bladder complications have formed the subject of considerable investigation, and several observations are quoted showing the marked occurrence of the typhoid organism in the gall-bladder, and the writer seems to agree with the statement that gall-stones, cholecystitis, and other complications are easily explained by their presence. Perforation of the gall-bladder is also discussed as well as the methods of treatment.

These brief extracts will, we hope, give our readers some idea of this most interesting book. The work is one of extreme excellence, and every page is full of information, not only to the surgeon, but also to the physician; and we can confidently say that it will form one of the leading contributions to medical literature this year.

DOUGLAS STANLEY.

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* We would remind our readers that a specimen was shown during the past session at the Path. and Clin. Section, by Dr. Foxwell, from a patient who died of this condition, and who some time previously had suffered from typhoid fever.

GEORGE HARLEY, F.R.S.; OR, THE LIFE OF A LONDON PHYSICIAN.*

In her Introduction the author states that she has tried to tell the story of her father's life apart from his work. In this she has succeeded admirably. The book is interesting from many points of view. It appeals to the general public from the fascinating way in which it is written. It appeals strongly to the parent who may wish his son to become a doctor, for therein is shown just the best line and method of study to be pursued, a line which brought to Harley the best results. He began medicine at Edinburgh University, graduated, then spent some time at the Continental seats of learning. He had early chosen the line of science, and it became his watchword. On returning to England, and after starting practice in London as consulting physician, he was further impelled towards science on finding so few of the then medical men there knew anything about it in the true sense of the word. He became one of the first doctors in England who combined scientific work with practice, and it was principally owing to this that his success proved so great. Another aim of Harley's was to avoid premature notoriety by publishing a trifling series of cases as young men generally do; in other words, he worked for the profession, not so much for the public, and so when he returned to practice after an enforced rest on account of temporary blindness, his professional brethren had not forgotten him, and sent him so many new cases that at the end of six months he was as busy as ever again. Part of the book is taken up with the strange experiences and adventures Harley had at different times at home and abroad; another chapter is headed "Anecdotes about Queer Patients." Some of his hobbies are entertainingly mentioned, such as his love of queer foods, his collection of poisoned arrows, coins, his papers on the "Mummy Eyes of

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* George Harley, F.R.S.; or, the Life of a London Physician. Edited by his Daughter, Mrs. Alex. Tweedie. London: The Scicntific Press Limited.

Peru," the "History of Drinking Horns," the "Origin of Throwing Sticks," "Shell Musical Instruments," etc. Very charming are the side lights thrown on his character from the way in which we are told how his Scottish childhood's home, filled with relics, such as pictures, miniatures, old silver and china, pieces of carved oaken furniture, exerted an always powerful influence over his mind, so that he could rarely pass queer old shops in London without ransacking them for facts and fancies, from teaports to horn shells and talking sticks. He appreciated every new discovery in medical science, and would often say, "Now England is beginning to assert her own, and in pure science takes the foremost place." We are indebted to Mrs. Alex. Tweedie for setting before us the life of a man who wished to be judged by his thoughts and deeds alone.

ELIZABETH STANLEY.

A CLINICAL TEXT-BOOK OF MEDICAL DIAGNOSIS.*

MANY of our readers are already acquainted with "Viedordt's Medical Diagnosis," either in the original or by translation, for the book is acknowledged as the standard work on the subject, a title which it in every way deserves. The marked progress in medical diagnosis of the last few years, more particularly in certain departments, has in a measure completely changed the whole face of what used to be called the "Practice of Physick." It is interesting to compare the older works, with their academic style and at times pedantic phraseology, with modern text-books. The comparison is not always to the advantage of the latter; the clear and graphic clinical pictures of the old masters of medicine at times put in the shade the more modern. But when we turn over the leaves of "Watson" or "Niemeyer" we realise the difference between the past and the present.

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* A Clinical Text-Book of Medical Diagnosis. By Oswald Vierordt. Translated by Francis Stewart, M.D. London: The Rebman Publishing Company.

Beautiful though the language be and classic the style, there is a feeling of a veil in front. We are struck at times, in the light of our modern acquirements, with the wonderful insight they seemed to have into latter-day medicine and pathology, but still we have to admit that things are changed, and we are in many ways living in happier medical times. The advances in our knowledge of Blood Diseases, Neurology, Pathogenesis, especially from the bactereological point of view, have been enormous, and as a consequence the methods of the older writers are now inadequate. It is in reading such a work as Vierordt's that we realise this danger. We cannot review the chapters of this work separately, as that has already been done for the former editions. We would, however, specially indicate the sections on the Examination of Gastric Digestion and the Methods of Examination of the Nervous System as the portions in this edition which seem to have been largely rewritten. Both these chapters show the great care which has been bestowed on the work to assure accuracy, and the illustrations in the second—the Method of Neurological Diagnosis—are very good. Only in the "Special Senses" does the matter strike us as not being quite as full as we would have expected. We notice also that several illustrations which have been copied into other works of the same kind, and which are particularly useful, are absent from this; but these minor points cannot be said to take away from its value. We could hardly recommend the book for students—it is too extensive and too comprehensive. Its object seems to us to be for those who have already done considerable work in clinical medicine, and as a work of reference. As such it cannot be surpassed.

VACCINATION, ITS NATURAL HISTORY AND PATHOLOGY.*

THIS work is an issue in book form of Dr. Copeman's Milroy Lectures, delivered before the Royal College of Physicians in 1898. As they appeared these lectures were read with considerable interest, as it was recognised at once that they represented the present state of our knowledge on the important question of vaccination. There is therefore no need to justify their separate publication by Messrs. Macmillan and Co. Dr. Copeman is acknowledged as one of the leading authorities on this important question, more particularly in reference to the storage of vaccine lymph by glycerine. This is one of the methods associated with his name, though at the same time he is zealous to show that it had been employed as far back as 1850 by R. Cheyne, and by Dr. S. Mackenzie in 1870. This method has proved of considerable convenience, for it has served to increase the quantity of the lymph and also to free it from bacteria. At the same time this glycerinated lymph is in every way as satisfactory as regards prophylaxis, while the ordinary putrefactive organisms do not seem to retain their power in the presence of glycerine. Into all the details of the method we need not enter. We must refer our readers to the interesting and able 9th Chapter of Dr. Copeman's work which deals at considerable length with the subject.

The earlier portion of the book is devoted to the history of vaccination, the relations of cow-pox, horse-pox, and variola, while histology and bacteriology accupy a prominent place. We would earnestly recommend a careful study of this book, more particularly at the present time. Not only is it interesting and above all instructive to the medical profession, but it is so written as to afford interest to the lay mind. We say this advisedly, for there could be nothing better than to see a work of this nature in the hands of everyone. Were such a thing possible we cannot but think that there would be less ignorance and fanaticism displayed by those who imagine they know. Less, not of the blind leading the blind as malicious persons leading the blind wilfully into danger. We cannot expect anything of such leaders, but every endeavour ought to be made to put the unwary on their guard against such pests of society as the professional anti-vaccinator.

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* Vaccination, its Natural History and Pathology. By Monckton Copeman, M.A., M.D. London : Macmillan and Co. Limited.

TRANSACTIONS OF THE ROYAL ACADEMY OF MEDICINE IN IRELAND.*

THE sixteenth volume of Transactions of the Royal Academy of Medicine in Ireland contains an unusually large number of short papers. In the Section of Medicine are found reports of many interesting cases, of which perhaps that of Recurrent Idiopathic Pneumothorax, without effusion and ending in recovery, related by Dr. J. M. Finny, is the most instructive. Short papers are contributed on Pneumonia Considered as a Multiple Infection, by Dr. J. W. Moore; and on Necrosis and Ulceration of the Larynx, by Sir George Duffey and Dr. J. M. Finny; and Dr. Drury also brings together some clinical remarks on Typhoid Fever.

The papers read in the Section of Surgery are on the whole of greater interest and variety, and we may especially mention Sir William Thomson's review of the indications for operation in Intestinal Obstruction; Mr. H. G. Croly's case of Left Subclavio-axillary Traumatic Aneurysm, treated successfully by ligation of the subclavian artery in the second part of its course; and Mr. T. E. Gordon's case of Hæmorrhagic Infarction of the Small Intestine.

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* Transactions of the Royal Academy of Medicine in Ireland. Vol. xvi. Edited by John B. Story, M.B., F.R.C.S., General Secretary, Surgeon to St. Mark's Ophthalmic Hospital, Dublin. Dublin: Fannin and Co. Limited. 1898.

The main interest of the Section of Obstetrics lies in the combined clinical reports of the Rotunda Lying-in Hospital for the four years from November 1st, 1893, to October 31st, 1897. The report of the first three years is contributed by Drs. W. J. Smyly, H. Wilson, and Jellett; whilst Drs. R. D. Purefoy, T. H. Wilson, H. Jellett, and R. P. R. Lyle are responsible for that of the remaining year.

The Section of Pathology contains sixteen articles, many of real interest; and the four papers in the Section of State Medicine are all worth studying. Five short papers on Anatomical subjects conclude the volume.

ON SO-CALLED SPASMODIC ASTHMA.*

In this paper the writer endeavours to show that the pain and difficulty in breathing, in fact, all the symptoms of asthma, are due to pressure by a dilated heart on neighbouring structures, particularly the vagi nerves, but also the intercostals, etc. He also points out that the various positions assumed by sufferers from asthma are just those which give most relief to the structures so compressed. He goes on to say: "A large dilatation of the heart, say the size of a small football (not at all an unknown condition), is a very heavy tumour, it weighs about as much as half a bucket of water, and the heart flops in the direction of gravity. . . ." We must say that we have not often met with hearts approaching the size of a "small football," and the weight of "half a bucket of water" appears to us much the same as saying a thing is the length of a bit of string, and that the "heart flops" is hardly an expression that one is prepared to meet with in medical literature. However, the idea is worth thinking out.

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*On So-called Spasmodic Asthma. By Ernest Kingscote, M.B. London: Henry J. Glaisher.

OBSERVATIONS ON CARDIO-VASCULAR REPAIR.*

DR. BEZLY THORNE'S investigations in the treatment of cardiac disease by the Schott system are already well known. In this paper he gives a description of the effect of such treatment on the peripheral and vascular system as well as the central, and shows that "among the indications of repair, one of the most definite and demonstrable, and not the least significant, may be observed in the minute vessels to which allusion has been made. The veinlets first become paler, and next undergo a progressive diminution of calibre, which culminates in the disappearance of the minuter portions of these vessels. . . The angiomata similarly decline in colour and prominence." The writer quotes cases in support of his view that the diminution in or disappearance of prominent cutaneous vessels is a reliable index to the reduction in size of the dilated heart.

A CODE OF RULES FOR THE PREVENTION OF INFECTIOUS AND CONTAGIOUS DISEASES IN SCHOOLS.†

THIS is a new edition of the Handbook of the Medical Officers of Schools Association, brought up to date in view of recent legislative changes, together with some alteration in the nomenclature as recently issued by the College of Physicians. The book contains rules for the isolation and management of all infectious and contagious diseases occurring in schools, more particularly from an administrative point of view, and consequently will be found of great service to all medical men who act as referees to schools, and we strongly recommend their obtaining a copy.

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* Observations on Cardio-Vascular Repair. By W. Bezly Thorne, M.D. London : J. and A. Churchill.

† A Code of Rules for the Prevention of Infectious and Contagious Diseases in Schools. Issued by the Medical Officers of Schools Association. London : J. and A. Churchill.

THE YEAR BOOK OF TREATMENT FOR 1899.*

THE fifteenth issue of Cassell's Year Book of Treatment contains some particularly interesting matter. An article on the Open-air Treatment of Phthisis, by Dr. Burton Fanning, is a particular one, and gives much useful information for those who may think of recommending it to their patients. The section on Nervous and Mental Diseases contains some interesting paragraphs on Tabes, Epilepsy, and Chorea. There is a short but suggestive article on Colitis. In every way the Year Book of Treatment comes well up to the standard of former volumes.

NOTES ON SURGERY FOR NURSES.†

THIS is the fifth edition of Mr. Joseph Bell's well-known Lectures to Nurses. The book has always been recognised as a standard work on the subject of surgical nursing, and the fact that it has now appeared for the fifth time is a sufficient evidence of its value. We strongly recommend it, not only for nurses, but to those who are charged with their training and teaching, as a thoroughly sound and handy book.

TRANSACTIONS OF THE CLINICAL SOCIETY OF LONDON.‡

THE thirty-first volume of Transactions of the Clinical Society of London contains thirty-two papers, and notes of thirty-six cases shown before the Society. Both series are of great interest, but the collection of papers is one which will be valued by both physicians and surgeons as containing many contributions of the greatest clinical value. The volume is one of the most interesting that we have received from this Society.

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* The Year Book of Treatment for 1899 London: Cassell and Company.

† Notes on Surgery for Nurses. By Joseph Bell, F.R.C.S. Edin. Edinburgh: Oliver and Boyd.

‡ Transactions of the Clinical Society of London. Volume the Thirty-first. London: Longmans, Green and Co. 1898.

New Books, etc., Received.

From Macmillan and Co.—
System of Medicine. Vol. vi. By T. **Clifford Allbutt**, M.D.

From the Rebman Publishing Company—
A Year-book of Medicine and Surgery. By **George W. Gould.**
An American Text-book of Diseases of the Eye, Ear, Nose and Throat.
Edited by G. E. de **Schweinitz**, M.D., and B. A. **Randall**, M.D
A Text-book of Obstetrics. By **Barton** C. **Hirst**, M.D.

From John Wright and Co., Bristol—
The Medical Annual, 1899.

From the Scientific Press—
Burdett's Official Nursing Directory, 1899.

From Swan Sonnenschein—
A Century of Vaccination. By W. **Scott Tebb**, M.D.

From H. K. Lewis—
Exploration of the Urethra and Bladder. By E. **Tuchmann.**

From Cassell and Co.—
Hygiene and Public Health. By B. A. **Whitelegge**, M.D., D.P.H

From Henry J. Glaisher—
Constipation and its Modern Treatment. By **Geo. Herschell**, M.D

From J. and A. Churchill—
Schoolboys' Special Immorality. By M. C. **Hime**, M.A., LL.D.

From Dawbarn and Ward Limited—
The Natural Waters of Harrogate. By **Francis Wm. Smith**, M.D.

We have also received the following Reprints—
La Voix Chuchotée. By **Paul Olivier.**
The Causation and Rhythm of the Crescendo Murmur of Mitral Stenosis. By E. M. **Broadbent**, M.D.

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THE
BIRMINGHAM MEDICAL REVIEW.
JUNE, 1899.

ORIGINAL COMMUNICATIONS.

A FEW ANOMALOUS CONDITIONS OF THE APPENDIX MET WITH IN APPENDICITIS.

BY GEORGE HEATON, M.A., M.B. F.R.C.S.
HONORARY SURGEON TO THE GENERAL HOSPITAL AND TO THE
HOSPITAL FOR SICK CHILDREN, BIRMINGHAM.

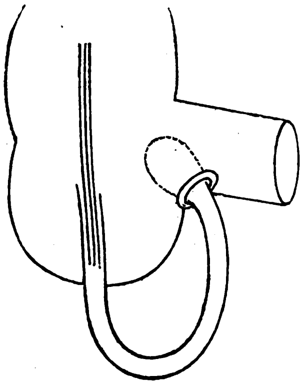
THE treatment of appendicitis is year by year becoming more and more a surgical measure. Cases now are more frequently brought under the surgeon's notice, and the question of operation is raised earlier. During the past twelve months I have had under my own care twenty-two cases of the disease, most of them very acute cases, which had had one or more previous attacks. Ten of these cases, by prolonged rest in bed and careful dietary with regulation of the bowels, made good recoveries without any more active measures. The remaining twelve were submitted to operation. Of these twelve cases one had general septic peritonitis on admission to hospital, and died a few hours after operation; a second died some weeks after operation from intestinal obstruction, due to kinking of the small intestine by inflammatory adhesions. The remaining eight have made good recoveries.

In operating upon such cases one must be prepared to meet a variety of pathological conditions of the appendix; in fact, in no two cases does it seem that the conditions are exactly similar. The five cases, a clinical abstract of which is given below, are examples of some of the anomalous conditions which may be met with :—

Case No 1.—*Tip of appendix acutely strangulated in a retroperitoneal pouch. Laparotomy. Removed. Recovery.*

E. J., a little girl aged 9, seen with Dr. Quirke, of Handsworth. Taken ill four days previously with sickness and severe abdominal pain. Pain much aggravated by movement of the bowels. Next day the patient had a severe rigor, during which the temperature rose to 103°. Except for this rise the temperature remained normal. She remained very ill and collapsed all day, but improved somewhat the following day. On October 27th pain returned with great intensity, and after a simple enema collapse again set in. The abdomen was retracted. Marked abdominal facies. Temperature 102°, pulse 120. Some tenderness on deep palpation in the right iliac fossa. Nothing definite to be felt. The abdomen was opened in the right linea semilunaris, and the cæcum and appendix exposed. The appendix was unusually long, quite free from adhesions, and showing no signs of peritonitis. But its distal end was firmly fixed and strangulated in a pouch of peritoneal lying to the inner side of the cæcum, just at its junction with the ileum. With some difficulty it was freed. The appendix was removed and the abdominal wound closed save for a small gauze drain. An

DIAGRAM OF THE STRANGULATED APPENDIX.



acute localised peritonitis followed the operation, and for some days the patient's condition was serious. She then made a rapid and complete recovery, and at the present time is in good health.

Messrs. Lockwood and Rolleston have called attention to the various retro-peritoneal pouches which exist around the cæcum. In this case the end of the appendix appears to have slipped into a pouch lined by peritoneum, just behind the junction of the cæcum with the ileum, and to have been strangulated by the margins of its mouth.

The child's symptoms, though they pointed to trouble in connection with the appendix, differed much from those ordinarily found in appendicitis. The pain was of a much more intermittent and colicky nature than usual. There was no definite inflammatory mass to be felt, and the collapse which occurred at intervals was more suggestive of obstruction of the bowels than of inflammation.

Case No. 2.—*Appendix acutely kinked. Distal end dilated and bulbous.*

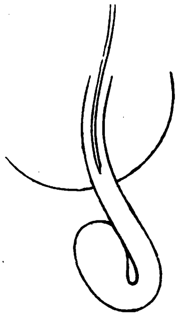
H. C., a boy aged 10, was admitted into the Children's Hospital with abdominal pain and tenderness.

History.—Constantly recurring attacks of pain in the right side of the abdomen for eight weeks. The attacks were accompanied by vomiting, and lately he has become emaciated. Bowels somewhat relaxed throughout illness. About five weeks before admission he discharged a quantity of blood from the bowel after one of these attacks.

On admission the boy was much emaciated, somewhat feverish, and complained of abdominal pain. A small hard tender mass could be felt in the right iliac fossa. . He vomited occasionally.

Abdominal section in right linea semilunaris. A mass of matted inflamed omentum covered the cæcum and appendix. The appendix itself was quite free and normal in its proximal half. At its outer third it was acutely bent back upon itself causing an obstruction of its lumen. The outer third was dilated into a bulbous sac which contained muco-pus. It was removed in the usual manner, a flap of peritoneal coat being raised from the appendix to cover over the stump. The abdomen was then closed. The boy made a good recovery, and has been in good health since. Ten days after the operation, when all the stitches had been removed, the patient by an incautious movement broke open the scar and some intestine protruded. This was replaced and the wound closed again with sutures.

DIAGRAM OF APPENDIX.



Case No. 3.—*Chronically inflamed appendix adherent to iliac vessels and fixed deeply in the true pelvis.*

A. G., aged 25, was admitted into the General Hospital under Dr. Stacey Wilson, and transferred to my care on May 20th, 1898. His present illness began four weeks ago with an attack of pain in the abdomen, which came on whilst he was at work. He had much diarrhœa for an hour or two after his illness began, but this has since given way to constipation. He has been in bed since with fever, vomiting, constipation, and abdominal pain, which has latterly been confined to the right iliac fossa. The patient has had several previous attacks of abdominal pain, which have always been of shorter duration and have never laid him up in bed.

While in hospital under Dr. Stacey Wilson he had a localised subacute peritonitis in the right lower quadrant of the abdomen. Pain and frequency of micturition were a marked feature during his illness. Per rectum a hard tender mass could be easily felt on the right side of the true pelvis. Under restricted liquid diet and the application of an ice coil to the lower part of the abdomen, all the acute symptoms passed off, and at the end of thirty days he was convalescent. A mass, however, remained in the right iliac fossa, and in view of the many previous attacks he had had, removal of the diseased appendix was advised. This was done on May 20th. An oblique incision was made over the cæcum and the peritoneum opened. The omentum and cæcum were much matted and inflamed. The appendix was after some difficulty discovered adherent to the fascia covering the iliac vessels, and fixed by firm extensive adhesions deeply in the true pelvis. Its removal from the pelvis was extremely difficult owing to its adherence to the vessels, and the organ was torn near its distal end during the process. There was some free oozing from the separated adhesions. It was ligatured close to the cæcum in the usual manner and excised. A gauze drain was left in the true pelvis.

After-progress.—Patient had a good deal of pelvic peritonitis for a few days after the operation. A tube was substituted for the gauze. On June 25th, rather more than a month after the operation, he had thrombosis of the iliac vessels of the right side. The wound was soundly closed some days before the thrombosis appeared. The thrombosis delayed his convalescence, but he eventually left the hospital quite well and strong on August 12th, wearing an abdominal belt to support the operation scar.

The appendix in this case was sessile, six inches long, and passed directly downwards deeply into the recto-vesical pouch. It was densely adherent to the pelvic walls, and its separation from the iliac vessels was very difficult. The subsequent thombosis of the vessels on that side was doubtless due to the damage done during its separation.

Case No. 4.—*Perforative Appendicitis. Localised feculent abscess beneath right lobe of liver.*

G. C., aged 12, was admitted into the General Hospital under Dr. Stacey Wilson, on October 3rd, and subsequently transferred to my care.

History of illness.—On admission he had been ill with abdominal pain and vomiting for four days. The attack began suddenly whilst at school, with abdominal colic and sickness. The vomiting continued every day until admission. The chief pain complained of was across the umbilicus. Bowels constipated. Temperature slightly raised. Pulse quick. There was little or no general tenderness of the abdomen, and the right iliac fossa could be palpated freely without any definite tumour being felt. Above and to the right of the umbilicus an ill defined swelling could be made out, apparently in the line of the ascending colon. The muscles were very rigid over it. The day after admission the abdomen became more distended, and abdominal section was decided upon.

The abdomen was opened in the right linea semilunaris over the swelling in the right hypochondrium. The large bowel was adherent to the parietal peritoneum and coated with lymph. The lower part of the colon and cæcum appeared normal. On separating some adhesions a localised collection of pus of very fœtid odour was opened. The abscess cavity lay between the hepatic flexure of the colon and the under surface of the right lobe of the liver and had the right kidney forming its posterior wall. The under surface of the liver was covered with a thick layer of lymph. A large fæcal concretion was removed from the abscess cavity. There was a collection of turbid serum in the general peritoneal cavity. The abscess cavity was cleansed, a glass drainage tube put into it and iodoform gauze packing used to shut off the rest of the general peritoneal cavity. The lower part of the abdominal incision was closed.

The boy made a rapid recovery. Feculent pus escaped through the drainage tube for three days. The pus then became sweet and the tube was withdrawn. He was discharged well early in November, and has remained in perfect health since.

In this case the appendix lay in the cellular tissue behind and to the outer side of the cæcum and ascending colon When the perforation occurred the abscess tracked up the loose tissue behind the colon, and formed a collection between the bowel and the liver. The interest of the case from a clinical point of view is the fact that the pain, tenderness, and tumour were all in the hypochondriac rather than the iliac region; in fact, the case was diagnosed at first as one of intussusception of the colon. The explanation lay in the perforation being at the extremity of an appendix which passed upwards behind the bowel towards the liver region.

Case No. 5.—*Recurrent attacks of appendicitis Appendix fixed to abdominal wall and dilated into a sac.*

J. B., aged 11 years, was admitted into the Children's Hospital on April 11th, 1898. He had been ill for three weeks with appendicitis. He had had several previous attacks, with intervals of indifferent health between them. He was much emaciated. The acute symptoms had subsided, and he had little abdominal pain or tenderness. There was a hard well-defined tumour on the right lower quadrant of the abdomen, which extended across the middle line and almost as high as the umbilicus.

April 19th. Abdominal section. An oblique incision made over the tumour, through the right rectus muscle. On exposing the tumour it was found to be densely adherent to the parietal peritoneum. The omentum was matted, and contained in it a quantity of caseating material. The appendix itself was intimately adherent to the abdominal wall, kinked and dilated in its distal half into a sac. It was removed with some difficulty, and its stump touched with pure carbolic acid. The abdomen was closed. The wound was dressed at the end of a week. Primary union had taken place. The boy made a good recovery. He rapidly put on flesh, and is now well and strong.

There was a marked tubercular history in this patient's family. This, together with the caseation found in the omentum, and the great thickening of the walls of the appendix, would suggest that the mischief in the appendix may have been tubercular. Unfortunately a microscopic examination was not made.

COUGH AS A PREDOMINANT SYMPTOM OF DISEASE IN CHILDHOOD.

BY DR. WALTER JORDAN,
ASSISTANT PHYSICIAN, CHILDREN'S HOSPITAL, BIRMINGHAM.

THE inability of infants and children personally to relate the story of their complaints undoubtedly relieves that story of bewildering detail, but sometimes results in its presentation in the barest form. In the case of hospital patients, the limited powers of observation of those to whom falls the duty of introducing the case, together with their still more limited powers of expression, can frequently achieve no more than a mere statement of the existence of some especially prominent symptom. So far then as the initial information goes, cases at a children's hospital present themselves to a large extent in great groups; there are the children who are wasting away, there are the children who are purged—upwards and downwards—there are the children who cry, and there are the children who cough, with yet others.

Now of the children who cough, that is to say, whose cough is so prominent that it excludes from the notice of those who look after them any other symptom of disease which may be present. Cough is of course a symptom of many diseases, and the most casual inspection, the slightest clinical examination in very many cases where the mother breaks down after saying "it has a cough," will supply material facts for diagnosis. Dyspnœa obvious to the trained eye, an expression of distress, pallor, with lividity about the eyelids and mouth, with a hacking hoarse cough of paroxysmal occurrence, put us on the track of capillary bronchitis. Widely-dilated nares, and hurried breathing with a short sharp hack of cough, similarly suggest pneumonia. The accompaniment of much crying due to pain indicates pleurisy.

A large number of cases of cough, however, are free from obvious associated symptoms, not only to the eye of the guardian, but to that of the doctor, and a systematic examination has to be undertaken to discover their cause.

The primary intention of coughing is the removal from the air-passages of matter lodging in them and irritating the sensory nerves. When however the source of irritation is in the mucous membrane of the nose, the removal of the irritation is usually attempted by the cognate act of sneezing. From this it follows that the investigation of a cough resolves itself into the examination of the respiratory tract for a source of irritation, it being, however, usually possible to exclude the nose from the necessity of examination.

It must, in addition, be remembered that coughing may be started by reflex irritation from parts outside the respiratory apparatus, so that the presence of a cough may indicate a morbid condition in the ear, brain, heart, stomach, or elsewhere.

Now a systematic examination is no less systematic because in the foundation of the system practical convenience has been considered, and from practical considerations I am in the habit of beginning my systematic investigation of a case of cough, in which no associated symptoms lead one straight to some section of the respiratory apparatus, by inspection of the pharynx and fauces. If here I do not find a complete and satisfactory explanation of the symptom I pass on to the investigation of the trachæa and large bronchi, and these failing me I consider whether the source of irritation may be external to the respiratory tract. Examination of the larynx I do not include. The special symptom of disease of the larynx is not cough, but alteration or absence of voice, or dyspnœa in all degrees, and it is most unlikely that cough, associated with these other symptoms though it be in many laryngeal affections, should stand alone in laryngeal disease as a symptom without hoarseness or dyspnœa to draw attention to the seat of mischief.

Examination of the pharynx may reveal one or more of the following conditions, any one of which may be responsible for the continuance of a cough :—

1. *Adenoid overgrowth in the naso-pharynx.*—This is a disease of early childhood, a period associated with activity of the

lymphoid structures. The group of symptoms to which it gives rise is now too well known to require anything like detailed description, as also is the impairment of general health and interference with healthy development which is due to their presence. A very frequent complaint of children with this condition is a peculiar, harsh, dry, barking, reflex cough, which is usually worse at night. The symptoms vary in degree with the extent of hypertrophy; moreover, the undeveloped features of infants or very young children do not show the well-known characteristic facial aspect. This cough, therefore, greater or less in degree, may be the only symptom to attract attention in a case of post-nasal growths, at any rate for a time. In every case where it seems possible that cough depends on this overgrowth, the forefinger should be passed behind the posterior pillar of the fauces, and thence upwards to the roof of the nasopharynx, traversing rapidly the whole of the post-nasal space so as to exclude or establish the presence of vegetations.

2. *Chronic enlargement of the tonsil* may occur alone or in connection with the pharyngeal overgrowth just mentioned. Most of the symptoms due to the latter may be caused also by tonsillar hypertrophy, and among them is dry reflex cough. Cough may, indeed, be the only symptom to attract attention, and this especially, I think, when the enlargement is not extreme. With marked hypertrophy growth and healthy development are greatly interfered with. Anæmia, buccal respiration, snoring, suffocative symptoms and night terrors during sleep, difficulty in deglutition, and Eustachian deafness may be present, and by the attention they attract remove the case from the category I am considering. But slighter degrees of enlargement may, apart from close examination, excite attention only on account of the frequent dry cough to which they give rise.

3. Very much less frequent but still a possible cause of cough is *enlargement of the uvula*, which I mention next from its contiguity to the tonsils. The uvula shares in general pharyngeal inflammation, and may also develop a state of chronic inflammation, being relaxed and congested and frequently elongated.

In well marked cases continued hawking is usually complained of, with a sense of some foreign body in the throat. The cough is sometimes very severe and persistent, particularly on lying down at night. In some cases even general symptoms of ill-health may be caused by the constant irritation. Comparatively rarely it will be found necessary to remove the redundant portion.

4. Yet another rare cause of cough such as I am considering is *retro-pharyngeal abscess.* Cough generally dry and hard, sometimes paroxysmal, is usually present with this. In the more chronic forms it may for a time be the only noticeable symptom.

5. *Chronic pharyngitis* of a general distribution, as distinguished from the affection of local aggregations of lymphoid tissue, is a sufficiently common condition in childhood. The scattered lymphoid nodules about the pharynx may hypertrophy, and we may also have a general thickening of the mucosa with enlargement of the vessels and secretion of tenacious mucus in the pharynx. Patients with either of these conditions complain of a constant irritating cough, there being a sensation of something in the throat which cannot be got rid of.

On examining the pharynx the mucous membrane is found to be diffusely congested. In the simple catarrhal forms it is bluish pink with enlarged veins coursing over the posterior wall, which is often more or less covered by collections of mucus. The mucous membrane of the uvula and soft palate is sometimes considerably congested, thickened, and granular, and some enlarged mucous glands are seen. The tonsils are often somewhat enlarged with gaping crypts, and the larynx, especially the inter-arytenoid fold, is injected: some hypertrophied lymph follicles are always observable; in granular pharyngitis there is often little else to be seen. There is seldom any excessive accumulation of mucus, in fact the complaint very often is that the throat is too dry.

The foregoing description is of the condition when well marked, the appearances are not always so distinctive in the class of cases I am considering, but they are the same in a less degree.

I may here allude to the connection between cough and constipation. The frequency with which these two symptoms coexist in cases where the cough alone has attracted attention leaves no doubt that the connection is something more than accidental. The connecting link is found in this pharyngeal condition. Dyspepsia and constipation are common causes of granular pharyngitis, and in constipated children pharyngeal irritation frequently sets up a cough. Such cases may be toxic in origin the toxins having a specific effect on the pharyngeal mucous membrane, and resulting from decomposition in the intestinal tract.

The structures and regions above the larynx having been scrutinised in vain for an explanation of cough, we may turn to the part of the respiratory apparatus below the larynx. Cough is said to be the special symptom of affections of the *trachœa and larger bronchi.* Unless the patient is a very young or weakly subject inflammation confined to the larger bronchi does not give rise to severe symptoms. Coryza and cough indicate its occurrence: no pain is complained of and general symptoms are slight or wanting. The only physical sign to be detected about the chest is the presence of a little sonoro-sibilant rhonchus or an occasional large bubble in the interscapular region. If these cases be neglected there may ensue a succession of little colds so that the cough continues for several weeks.

Chronic bronchitis of the larger tubes is by no means rare in children of five or six years old or more. These are frequently of the type known as scrofulous, and have been subject to repeated attacks of bronchial catarrh. Such children are very sensitive to chills, and are apt to be troubled in the changeable seasons of the year with a distressing cough and shortness of breath. In a milder form of the disease the child merely suffers from a chronic cough, which undergoes very noticeable exacerbations on any change of the weather. The cough is paroxysmal, worse in the morning and evening. Physical examination may reveal coarse dry rhonchi and moist râles, and sometimes fine râles at the base of the lungs behind.

Many of these cases are associated with ***hereditary tendency.*** Many more own an association with ***rickets***, of which indeed when present the bronchial condition may be regarded as part. ***Measles*** gives rise to it, as also very frequently does *whooping-cough.*

Trachæo-bronchial catarrh practically exhausts the list of conditions of the respiratory apparatus below the larynx which may give rise to cough as an isolated or rather apparently isolated symptom. It may, however, not be out of place to recall a condition which in rare cases has taken this form—that of foreign body in the air-tubes. Violent dyspnœa is not an unfailing symptom of this accident: in some recorded cases a little cough has been the only symptom complained of. No rules can be laid down as to the indications of a state of things which must always be abnormal, but a history, a hint, that a foreign body may have passed into the air-tubes should always be treated with the greatest respect, and even in its absence it is well to cultivate the state of mind in which a possible foreign body is remembered equally with other conditions as capable of maintaining a chronic cough. For the history is not always to be obtained, especially in the case of infants ; on the other hand, it may be misleading.

As more or less connected with the subject we may consider the nature of the cough itself. Cough varies in kind. It is loud and clanging at the beginning of an attack of croup, and husky and stridulous at a later stage. In pneumonia with accompanying pleurisy it is suppressed and painful. In asthma it is short and dry, but not at all paroxysmal. In bronchitis it is hard and frequent, and increases the pain in the chest ; when the disease extends to the smaller tubes it is hacking and hoarse and occurs in stifling paroxyms, greatly increasing the difficulty of breathing and intensifying the lividity of the face; vomiting sometimes follows a paroxysm. In catarrhal pneumonia the cough is a short hard hack, which may be repeated with each expiration for many minutes together. *Paroxysmal* cough reaches its acme in whooping-cough, where the paroxysm has an ordered and distinctive character. A paroxysmal habit of cough seems sometimes to be established by whooping-cough, so that even for as long as one or two years after the attack of whooping cough an ordinary catarrh will give rise to a cough which assumes almost the typical paroxysmal form.

Chronic enlargement of the tonsils causes a cough often very distressing and somewhat paroxysmal in character; a less degree of hypertrophy gives rise rather to the cough which merges into the ordinary effort to clear the throat.

In very many cases a cough is said to be worse at night. There is, I think, nothing characteristic in this. The statement is made frequently of coughs which on examination are found to be of very diverse origin. The alteration of position in lying down with its effect on secretions, and the removal from one room to another, frequently of much lower temperature, are quite sufficient to account for a cough being worse at night.

A night cough of children has however been described.* It is said to be a cough which comes on exclusively at night, not when the child first lies down, but after a few hours of sleep, from which indeed it does not wake up at first, but only after coughing for a time. It is a short, tearing, irritable cough, dry, not paroxysmal, not accompanied by expectoration, nor occasioning dyspnœa. After lasting for an hour or two it ceases, and does not recur until the next night, when it comes back with just the same characters as before, and thus continues with occasional intervals of quiet for a night or two, even for weeks together, not apparently seriously affecting the child; though the disturbed rest at night tells somewhat on it, and it loses the look of health which it had before.

Personally I should not like to say that I had ever identified such a case, and I am inclined to think that the night cough of children on investigation will usually own some comparatively common-place cause.

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* See West—Diseases of Children.

That the nervous system has an influence in the origin and establishment of a cough is not to be denied, when we think of the mechanism of coughing. Nervous children, that is children whose unhealthy nervous systems cannot properly control their bodily functions and reflex actions may make a habit of anything, of a twitch or spasm, of micturition at undue seasons, and among other things of cough. Thus a cough the result of a slight catarrh may in a nervous child continue and be established as a habit, which remains long after the original cause has disappeared and been forgotten. A cough which can only be drscribed as *hysterical* also occurs in children, and may be cured by such measures of refined brutality as suffice for the annihilation of hysterical aphonia.

In conditions of excessive debility, such as those arising after the specific fevers, especially measles or whooping cough, or other severe disease, we get an intolerance of slight irritations which may result in frequent coughing. Irritation is but a question of degree. Chlorine is irritating, so to a less degree is Birmingham air. Chlorine causes most people to cough; the thoroughly debilitated may develop a cough solely from the inhalation of ordinary air.

To sum up, cough as an apparently isolated symptom calls for systematic examination of the respiratory tract. This will show, I think, that, in perhaps a majority of cases, a catarrh of the trachæa and bronchi is the cause of the cough, while of the remaining cases nearly all will find their source in some affection of the pharynx, a majority, in my experience, in moderately enlarged tonsils, the next frequent cause being pharyngitis, which again may arise in gastric or intestinal conditions, being commonly associated with constipation. In a few cases adenoids of post-nasal situation may be a cause; in still fewer elongated uvula. Retro-pharyngeal abscess and foreign body in the air-tubes may be borne in mind as causes which in the rarest of instances may be the explanation of a cough. An unhealthy nervous system or a condition of extreme general debility may result in circumstances normally harmless giving rise to a continued cough.

What I particularly wish to emphasise is the propriety of careful examination of the fauces and adjacent parts in all cases of cough where associated symptoms do not unmistakably lead to the seat of disease. I am aware that there is nothing new in anything that I have said, but I have ventured to repeat established truths after reflecting that there is no truth so well established as not occasionally to be forgotten in practice.

RHEUMATISM IN CHILDREN.*

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RHEUMATISM is one of the most striking examples of the strange difference existing between children and adults in their reaction, if one may use the expression, to certain diseases. We might almost consider adult rheumatism and child rheumatism two distinct clinical conditions with considerable justification, for a symptom which is prominent in the one is, as a rule, little marked in the other at a given time. My object, then, is to try to define these curious differences. I have purposely used the term Rheumatism in order to embrace its various manifestations, acute or subacute, but I do not intend to refer to the rarer chronic form, nor the still more rare Rheumatoid Arthritis of children. I hope to show the extreme importance of being ever on the watch for the most trivial manifestations of the disease in the child.

Acute rheumatism, as seen in the adult, always claims serious attention, and its well marked features are deeply impressed on everyone. The swollen, intensely painful joints, the temperature more or less high, the profuse sweating, make up a picture which has assumed a certain definite form, perhaps from its often recurring presentation before our minds. Not so with rheumatism in the child. Here we are met with one of those protean pictures, the very outlines of which we shall miss unless we take the broadest possible view of the entire subject. To enable us, therefore, to take a wide conception of the disease in the child, we would do well to omit the adjective "acute," for we shall see that some of the manifestations as seen in the child, while hardly meriting the designation, are as much part of a deeply serious attack of rheumatism as the most severe arthritis in the adult. In the adult, acute rheumatism is a disease characterised by arthritis more or less painful, with frequent complications in the form of cardiac disease. In the child, rheumatism is a disease which may involve heart, joints, lungs, skin, the nervous system, muscles, all together or one after the other, and so in the words of Dr. Cheadle: "the history of a rheumatism may be the history of a whole childhood." Even when we look at the natural history of rheumatism outside the actual clinical attack, we meet with paradox on paradox. Thus, we find according to the Collective Investigation Committees' report (to which I shall have to make frequent reference) that from 1 to 5 years of age, male children are considerably more liable, but from that age to about 15 the proportion of females to males steadily rises till from 11 to 15 there is a marked preponderance of female rheumatics. From 15 to 20 there is a gradual fall, till in the end there is a slight preponderance of males. It seems a remarkable thing that sex should so greatly influence the incidence of a disease such as rheumatism. But very much more marked and more important is the influence of heredity. Notwithstanding the eminently unsatisfactory nature of hereditary histories, especially among the hospital class of patient, we cannot but be struck with the vast numbers of cases of rheumatism in which it is possible to trace a family tendency to the disease. This may be inherited from either parent, but should both transmit a rheumatic proclivity, it seems almost impossible for the children to escape the consequence in some form or other. I shall have to return to this further on, but I may give one or two cases in point. Thus, Goodhart records an instance in the Guy's Hospital Reports, vol. xxv., of a family in which both parents were rheumatic. Of the six children, five were affected, the eldest, aged 14, had had rheumatic fever twice and showed mitral disease; the next, a boy aged 10, was similarly affected; the third, a girl, had died of mitral disease; the fourth, also a girl, had had rheumatic fever and mitral disease; the fifth, a boy of 4, had marked arthritis, and the only one unaffected was the baby aged 14 months. Dr. Cheadle gives very many instances of the appalling results to the children of rheumatic parents.

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* Paper read before the Queen's College Medical Society.

We may turn now to the actual manifestation of the disease in early life. The symptom, which is most evident to both patient and physician in adults, the arthritis, is strangely slight in the child, there may be at most some slight tenderness and swelling of ankles and wrists or perhaps mere stiffness on movement which may be thought of no consequence by the mother and only recognised by the physician with the aid of other evidence. Many a time I have patients brought to me at the Children's Hospital with heart lesions, and when I ask the question, "Has the child ever had Rheumatism?" the usual answer is "No;" but when I ask "Has he ever had growing pains?" "Oh, yes, once or twice he came home from school saying his joints ached a bit." No more notice than this is taken—"growing pains" is the maternal diagnosis, and the child is sent off to school till such time as the heart may become hopelessly diseased. The slight, almost trivial, amount of joint pain in children is one of the worst features of the disease, and is one for which we should be ever on the watch. We may ask the reason for making so much of a slight symptom. It is this: that Rheumatism in children in a very large number of cases is primarily a disease of the heart, and there is little indication of the severity of the attack. For example, I saw a gentleman some time ago who had a very severe attack of Acute Rheumatism; for weeks he lay in bed and suffered agonies from joint pain. There was high temperature and profuse sweating. I saw him some time later on when he was getting out and about. He had joint pain on slight provocation, such as a damp day. In course of time he gained in health and strength. The last time he came to see me he was much better in every way. What was the condition of the heart. The most careful examination failed to discern any lesion. His attack of rheumatism centered round his joints, the pain of which kept him in bed, on his back, bound hand and foot. The severity of his rheumatism was estimated by himself and others by the severity of the pain. In the child the disease may be as severe, even more so, but many times less painful. There is far greater tendency to heart lesions, and the most important point—absolute rest—in a case of heart lesion may be utterly overlooked; a little stiffness or aching of the joints is made little of by the parents, and the child is allowed to go about, attend school, do anything in fact while suffering from acute rheumatism, and having, it may be, the cusps of the mitral valve fringed with vegetations. I have known children brought on foot to the out-patient room in such a condition. I do not mean to imply that the joint pain is never considerable, for it may be fairly severe. I do want to emphasise the fact that the severity of the rheumatic attack cannot be gauged by the degree of pain in the joints. But what of other leading symptoms so familiar to the hospital student—the high temperature and the sweating. In the child they may be slight or absent. The thermometer may show 101° or 102,° not often higher, and hyperexia, one of the direst complications of rheumatism in the adult is practically unknown in the child. Observers of large experience, such as Dr. Cheadle, speak of never having met with a case. We might think that the child with its proclivity to high temperature on the least provocation, perhaps an attack of gastritis, would be doubly liable to severe pyrexia during rheumatisim, and trebly liable when we bear in mind the pyrexial nature of this disease; but it is apparently otherwise. Sweating in children is also a slight symptom. I have never seen profuse sour sweating in a child with rheumatism.

So far we have looked at the negative character of the child's symptoms, compared with the very prominent conditions in the adult. But we have seen that the tendency to heart lesions is great. There may be mitral, aortic or tricuspid, and, I believe, pulmonary endocarditis, the first being the more common. There may be pericarditis and myocarditis. These may occur separately, or all may be present together, constituting carditis. Endocarditis usually occurs early in the case, though it may appear at any period, while pericarditis has a greater tendency to supervene later. It is not to be supposed that because these lesions are frequent that they are always of great severity; either may be sub-acute, and both have a marked tendency to recurrence. Unfortunately too, the signs are vague and indefinite: some excited, uneven heart action, some quickening of the pulse, are symptoms that must be carefully watched. A sign which is of considerable use in some cases is reduplication of the second sound at the apex. This may be the earliest indication of endocardial inflammation, and can at times be followed step by step till a murmur of unquestioned character is to be heard.

Pericarditis is sometimes extremely difficult to diagnose in the child, especially in very young children. I have frequently found it *post mortem* when it had not been suspected during life.

In other organs we meet with marked lesions. I need not do more than mention pleurisy. Pneumonia is probably much more frequent than is supposed, for its additional symptoms are slight. I have seen most marked lobar pneumonia come on in a case of acute endocarditis of the left side of the heart with severe chorea.

A most interesting feature in child rheumatism is the presence of subcutaneous fibrous nodules. They are chiefly found near the large joints—elbow, knee, etc.—but may occur anywhere. Their association with rheumatism is very marked, and hence they are of extreme value when other important signs are slight or absent. Above all are they of value in connection with heart complications, for they usually occur along with endo- and pericarditis. Furthermore, they seem to be formed by a process similar to vegetations of the cardiac valves. They may almost be considered vegetations within reach. They are rarely seen in adults, though curiously, the most marked instance of fibrous nodules that has come under my own notice was in a woman of 37. In size they vary, some being very small, others as large as an almond. They are not tender to touch, and their duration is variable, sometimes lasting months. There are also some skin lesions closely associated with rheumatism—Erythema Marginatum, some forms of Purpura and Erythema Nodosum. Time will only permit me to refer to the last. The lesion is characterised by the appearance, chiefly, on the lower limbs of blotches rounded or oval in shape, slightly raised in some cases, and of a reddish purple colour, fading in a few days into blue and yellow tints. This curious lesion has not been generally acknowledged as a relative of rheumatism, but that there is a close connection I feel convinced. My former teacher, Dr. Stephen Mackenzie, has gone carefully into this subject, and has gathered together a large amount of evidence drawn from the vast clinical material under his observation at the London Hospital. His conclusion is that "Erythema Nodosum is frequently, if not generally, an expression of Rheumatism," and is often accompanied by endocarditis, arthritis, sore throat, etc. Although it may occur as late as 60, the larger number of cases are found in the second decennium, and of 108 cases collected by Dr. Mackenzie 18 were males, 90 females. In Erythema Nodosum, therefore, I believe we have another indication of the main and underlying condition.

I have reserved for the last, the subject of chorea. Its clinical features there is no need to mention, for they are familiar, and in point of fact do not concern us here. It is its relation to rheumatism that we have to consider. That there is some connection between rheumatism and chorea, has long been recognised by some, but not until within the last few years has it become generally accepted that there is close relationship. When we ask what the relationship is, we are met by a diversity of opinion that is hardly equalled in any other subject in medicine. That wonderfully astute physician, Dr. Bright, seems to have held the view that rheumatism is one of the causes of chorea. It is strange that in the leading work on nervous diseases in English, and in the edition published in 1893, the author says: "It is impossible to regard chorea as the result of acute rheumatism since each disease occurs so frequently without the other." Again, Fagge states in his Text-book that, "Besides acute rheumatism, chorea is the chief and almost the only cause of a simple inflammation of the valves of the heart, and this lesion probably occurs in almost every case of chorea." Here, therefore, is a strange variance, and no doubt if we had time to compare the large numbers of works and papers on the subject, we should end in utter bewilderment. The strangest part of the whole question is the use that is made of statistics—and to a large extent the same statistics—in trying to support some point or reconcile one point with another. Nearly every writer on children's diseases works out the statistics of the subject, and the Collective Investigation gathered details of 439. They are all made to show that so many cases of chorea were preceded or accompanied or followed by endocarditis, and so many cases of chorea occurred without endocarditis, and so on. Now, instead of examining either fresh or old statistics, let us look at the history of a few cases and examine a few points. Some weeks ago I saw a bad case of heart disease in a child, who the mother said had had slight rheumatism. Her elder sister is a martyr to heart disease, had had St. Vitus Dance, but never any rheumatism. In an able article on the Etiology of Chorea in the *Journal of Mental and Nervous Diseases*, Dr. C. H. Brown gives the following case: "A boy aged 11, with a double family history of rheumatism and whose mother was neuropathic, was subject to a severe fright, and as a result, fell from some stairs by a railway station on to the street below. Six months later he developed chorea, lasting ten weeks. Then a second and shorter attack, then for some time erratic pains in the back, knees, arms, etc., then subcutaneous nodules appeared, soon after, another attack of chorea came on. Soon after, his breath became short and his feet and ankles began to swell. Examination of the heart at this time showed the presence of mitral disease." I could quote numbers of cases, all more or less alike. What do they show? First, that the choreic patient may not have had any personal history of rheumatism so far as joint pain is concerned, but some other member of the family, mother, sister, or brother may have had it. I had a case bearing this out yesterday morning at the Queen's hospital. Secondly, the choreic patient may have arthritis, endocarditis, subcutaneous nodules, etc. I could quote cases of almost any combination, and still further, cases of recurrence of the various conditions with or without chorea. To what does all this point? To this, that chorea is one of the various ways in which rheumatism may express itself. The child is rheumatic, and that is enough. That child may have arthritis endo- or peri-carditis, nodules, erythema or chorea—all due to the one dominant condition—rheumatism—with or without any of the others. Endocarditis, therefore, does not cause chorea, nor chorea endocarditis, each is the result of a cause common to both.

But there are one or two points to clear up. Fright is often said to cause chorea. Probably, this is greatly exaggerated. Most children are frightened, but not all become choreic, and when a child becomes choreic it is easy to find fright. Dr. Brown, whose case has been quoted, disbelieves strongly in fright alone as a cause of chorea. Possibly fright may help, or in a few cases be caused, but that it is infinitely below rheumatism as a cause of chorea I feel convinced. It has been asked why, if chorea be of rheumatic origin, has anti-rheumatic treatment no effect on it? This is a point I have often thought over, and I offer the following outline of the pathology of the disease in explanation.

Chorea is due to a vascular lesion. The smaller vessels are much dilated, especially those passing into the superficial layers of the cortex—the walls being apparently paralysed and toneless. This allows of exudation into the perivascular spaces, alterations in nutrition take place in the cortical cells, allowing of an irritative and irregular discharge of energy, resulting in the purposeless movements of chorea. This vascular lesion is the result of the rheumatism, which, as a rule, attacks the fibrous structures, but may attack vessel walls. Now, in what patients are the finer vessels prone to suffer—in the female, in whom the vascular system is far more readily affected than in the male, and if there be a tendency to neurotic affections, such a patient will most likely become choreic under certain conditions. Some young males greatly resemble the female in their vascular physiology, and such are likely to be affected in the same way. What are these conditions? Chiefly rheumatic. But is there any other evidence in favour of vascular complications in rheumatism that would bear out this point? There is the Erythema Nodosum. Here, we have "the whole vascular net of the cutis and the papillary body dilated and closely surrounded by densely packed cells." In other words, much the same lesion as in the cerebral cortex, making due allowance for differences in the vascular arrangements. Now, we saw in speaking of Erythema Nodosum that the vast majority of cases occur in females, and it would seem that the skin lesion and the brain lesion are strangely related. Has the embryological connection between the two anything to do with it?

Now to come to the question of anti-rheumatic treatment, and more particularly salicylates. These do not seem to have any effect on vessels, and therefore would not be expected to be of benefit in chorea, and I have given salicylate of soda in cases of Erythema Nodosum without any result.

Salicylate treatment seems beneficial only in the articular manifestations of rheumatism. This introduces us to the subject of treatment in the child, and time will only permit me to generalize. Seeing that arthritis is, in many instances, not prominent, and that heart lesions are liable to supervene in the slightest case, it is not surprising to find that treatment by salycilates is of less value in the child and should be used with great caution on account of their depressing action on the heart, the principal organ concerned. In fact, alkaline treatment is I believe far safer in many cases. But the chief point is to be prepared for endocarditis. And above all not to overlook a trivial case of joint pain. A child who has a rheumatic inheritance, especially if from both parents, is a potential case of heart-disease. If such a child complains of only some aching or discomfort of the joints he must be treated as a case of rheumatism, and should be kept at rest. Should there be the least evidence of altered heart action rest must be prolonged till well after the disappearance of every symptom. We cannot be too cautious, for so insidious is the onset of endocarditis and so liable is it to recur—all depends on not being taken unawares.

We see, therefore, what an extensive subject is rheumatism in the child, how the whole character of the disease changes with the growth of the patient. If we would deal efficiently with the condition, we must grasp every detail. The child who has a rheumatic inheritance, especially if from both parents must be treated as rheumatic, no matter how slight the indication, if only an aching wrist joint. And should he or she have the least joint pain or stiffness, that patient should be kept at rest in view of the insidious onset of Endocarditis; and should there be the least evidence of such, rest in bed must be prolonged, even till long after the disappearance of a murmur for recurrence is only too liable to take place. This treatment by rest is the chief. Salicylates should be used with great caution in children, their depressing influence on the heart—the principal organ concerned—must be constantly kept in mind.

REPORTS OF CASES.

SOME CASES OF TUBERCULOSIS.

BY E. N. NASON, M.D. CANTAB.

THE following series of cases may be of interest as bearing upon various possible sources of infection in Tubercular diseases, also as showing the power of resistance of the previously healthy tissues to the assaults of the Tubercle Bacillus.

A female infant, aged eight months, was brought to me by her aunt, who was taking care of her on account of her mother's illness. I found a soft tender swelling around the metacarpal bone of the right thumb; firm, hard, oval swellings over the back of the 2nd and 3rd metacarpal bones of the left hand, and a similar condition over the 1st and 2nd metatarsal bones of the left foot. The mother, during her pregnancy, had suffered from what was described as a "neglected cold," but I afterwards saw her and found her to be suffering from phthisis, from which she died about ten months later. The father was a thoroughly healthy man.

The swelling of the right hand was opened, and caseous pus and some fragments of a carious metacarpal bone were evacuated. The other swellings gradually subsided without suppuration, and in the course of several months entirely disappeared. The treatment consisted in fresh air and codliver oil. Four years later the child developed a very chronic tubercular synovitis of the extensor tendons of the right wrist. This was many months in subsiding after being fixed in the usual way. The general health of the child throughout has been excellent, and when she was last seen at the age of eight she was apparently quite well.

It seems probable that this was a case of real inherited tubercle, or at any rate that the child was infected in utero.

F. L., the daughter of a tuberculous mother (who died soon after giving her birth) and of a healthy father, developed Pulmonary Phthisis at the age of 18 years. While in the last stages she taught a younger half-sister and brother, the children of a second marriage, the mother being healthy. The room in which the children were taught was small and ill-ventilated. About the time of F. L.'s death from phthisis both children were taken suddenly ill. The girl developed pleurisy (left), pericarditis, and peritonitis in rapid sequence, and with some effusion in each case, especially into the peritoneum. The boy developed pleurisy (right) but without any demonstrable effusion. He soon recovered, and has so far (8 years) had no further development of tubercle. Not so the girl; she, after an interval of about three years, during the first of which she was slowly recovering from the conditions mentioned, developed typical white swelling of both knee-joints. After some nine months' treatment, chiefly by plaster of Paris cases, Scott's dressing, and attendance to general health, she made a complete recovery, the knees showing no sign whatever of the mischief.

She then enjoyed about four years' good health until last October. After an attack of Influenza (?) she then had an insidiously developing left-sided pneumonia with consolidation of almost the whole of the left lung and a few scattered râles at the base of the right lung. She had a continued high temperature (102°–103°) for more than two months, with practically no expectoration, marked wasting, but scarcely any sign of resolution. By the beginning of January, however, the temperature fell to normal and resolution was taking place satisfactorily, with accompanying improvement in general condition, so that it now looks as though she would win her third battle against the development of tubercle.

These cases are good instances of the direct infectiveness of phthisis, of the power of resistance of the previously healthy organism where there is no inherited proclivity, of the length of time bacilli may lie dormant (for I do not think it at all likely that there was any fresh infection), and of the protean nature of "the attack."

From 1884 to 1895 a school at which some four or five girls of the upper classes and of ages varying from 15 to 19 attended, was held in a small room 12 ft. × 14 ft. The following four cases all occurred among the 24 or 25 girls who, in all, attended this class during this interval. The room in which this class was held was next to a butcher's shop, and had one window, which was nearly always kept open, and close to which meat used to hang exposed. The butcher who kept this shop was notorious for selling meat from diseased animals, and was twice convicted for so doing. The four cases in their onset and course have many points of resemblance, and I cannot help thinking were infected from one and the same source. In Case 2 alone was there any, even slight, family history of tubercle.

Case 1.—A. B., aged 16, who had for some time worked in the room mentioned above, in August, 1885, was taken suddenly ill. The illness was at first thought to be typhoid. The chief features were continued fever (104°-102°), obstinate constipation, subacute peritonitis, no recognised lung mischief. After six or eight weeks there was apparent recovery, followed in December by a sudden onset of high temperature, accompanied by dulness at the base of the right lung and some fulness of abdomen. Slight remission of fever occurred after some weeks, only to be followed by a return a little later, accompanied by very slowly increasing astheuia and emaciation. In the following summer, or nearly a year after the first onset, death took place, with symptoms of acute peritonitis, either due to perforation or to rupture of a suppurating mesenteric gland.

Case 2.—M. G., aged 17, in June, 1894, was noticed to be looking ill, and was found to have evening temperature (100°-101°) and some pleurisy at the base of the right lung. There was little or no pain, but distinct loss of flesh and asthenia. A little later dulness as high as the angle of the scapula was found, with diminished voice and breath sounds, but patchy creaking over the dull area. The temperature, especially in the afternoon, was persistently raised for several weeks, and then followed a period of apparent though not quite complete recovery. In November, 1894, there was a return of high temperature (103°) and of the dulness and pleuritic sounds, but now at both bases instead of the right only, and accompanied by signs of slight chronic peritonitis. Steady emaciation with continued fever for three months followed, and there developed some patchy consolidation at the bases of both lungs, and cough and expectoration of a small amount of clear or sometimes frothy mucus. Examination for bacilli gave negative result. These conditions slowly increased, and death took place in May, 1895.

Case 3.—M. J., aged 17, was noticed early in 1895 to be looking ill and to be flushed at night. When I first saw her, at the beginning of April, she had continued fever, asthenia, dulness at the base of the left lung, subacute peritonitis, with some fulness of the abdomen. After this condition had lasted for about three weeks longer without any appreciable change, symptoms of acute peritonitis suddenly supervened, suggestive of either perforation or rupture of suppurating mesenteric gland, and death occurred in less than twenty-four hours.

Case 4.—A. C., aged 19, was taken suddenly ill in February, 1894. The symptoms were continued fever, anæmia, loud pericardial and pleural friction sounds, and profuse sweats of a somewhat sour character. The temperature was uninfluenced by the salicylates, and the friction sounds came and went and changed their position and intensity constantly. Then at the base of the right lung, where the pleurisy was most noticeable, some patchy consolidation appeared. The pulse kept abnormally quick, 130 or more. There was then profuse hæmoptysis, lasting several days; then a period of some days, during which vomiting was most persistent and distressing, so that no food could be kept down, and rectal feeding had to be substituted. Extreme prostration, with an almost imperceptible and quite uncountable pulse, seemed to be ushering in a fatal termination when there was an unexpected rallying, accompanied by a fall of temperature. There was then a period of fourteen days' remission, then a second though less severe attack of hæmoptysis, vomiting, and prostration. Then followed a slow but steady improvement, with gradual restoration of colour. The pulse, however, remained at about 100–120 per minute. During convalescence there developed a subacute peritonitis, with considerable effusion. The patient spent the winter in Bournemouth, but after her return in the early spring she had a fresh development of pleurisy in the right infra-mammary and axillary regions. This was so marked that it could be felt with the hand. There was some accompanying rise in temperature, but comparatively little pain, and some expectoration of frothy, rather sticky, mucus, but no definite return of the hæmoptysis. As the peritoneal effusion did not diminish it was syphoned off to the extent of about two pints and did not again collect. From that time there has been a steady improvement, and during the last three years no return of any of the symptoms. The whole trouble seems to have cleared up with the possible exception of a very little thickening of the pleura over the right base.

These four cases all began by a practically simultaneous affection of two or more serous membranes. In all it was the base of one or other or both lungs which became chiefly affected. In all, except Case 3, there were periods of almost complete remission of symptoms. There was subacute peritonitis in all, followed in two by acute peritonitis and death. This series of cases, all occurring out of so small a total number of girls who had nothing in common except the room where they spent four or five hours a day, points to the infection having originated in or near that room. After careful inquiry I could find no source of infection except the possible one suggested, viz., the diseased (tubercular) meat hung close to the window, the infection from which might have been conveyed by flies, or otherwise into the room occupied by the girls and which certainly had very insufficient ventilation.

GANGRENE OF LUNG, FOLLOWING INTRA-THORACIC HÆMORRHAGE.

BY T. STACEY WILSON, M.D.

THIS report deals with the case of a man who suffered from gangrene of the lung following upon symptoms resembling the rupture of an empyema into the bronchi. Although the case is incomplete through the refusal of the friends to grant a *post-mortem* examination, the history of the onset of the illness is so clear and so unusual that the case is well worth recording.

The patient, John H. G., aged 32, was admitted to the General Hospital, on Sept. 2, 1898, complaining of troublesome cough and copious fœtid expectoration of about seven weeks' duration. He had been always fairly strong and healthy before the onset of this present illness, although he had pleurisy many years ago, and speaks of having had bronchitis often and being very subject to colds. He has never had any real illness and has never had hæmoptysis. His habits have fairly been regular, and no history of alcoholism was obtained.

About eight weeks prior to admission he was in his usual health and was playing cricket one Saturday afternoon, when between 6 and 7 p.m. while he was batting he was seized with severe pain in the back and left side. He had to stop play immediately, and could not walk off the ground without assistance. He felt very faint and was noticed to be very pale. He speedily became extremely breathless. For the next three days he was very ill. The pain and dyspnœa were very severe, although the former was not quite so bad as on the first night after the onset of his illness.

On the Wednesday, four days after he was taken ill, he states that "an abscess in his left side suddenly burst internally," and he spat up a "gallon" of stinking stuff of a brownish black colour. On the same day he says he also spat up about half-a-tea cupful of blood of a bright colour. The breathlessness was relieved by the bursting of the abscess and he felt much better that same day.

He remained in bed five weeks, the expectoration steadily diminishing in amount all the time, and at the end of the five weeks was very little in amount. He now felt so much better that he got up and went out for a few minutes' walk in his garden most days during the sixth week of his illness. This was about ten days prior to admission. After being up for about a week he was suddenly taken ill again and coughed up a large quantity of extremely offensive material; he describes it as being brown in colour and smelling like a sewer. He had very severe attacks of coughing during which he had to be supported as he sat up in bed. In describing these attacks he says he felt as if every now and then a bladder had burst in his inside. The cough expectoration has continued night and day since, greatly interfering with his sleeping.

State on Admission.—Well-built man, rather emaciated, and of a sallow complexion. Temp. 102°, Pulse 120, Resp. 30. Cough frequent and troublesome, sputum copious, muco-purulent, and water very offensive. The chest is well-formed and symmetrical, but rather hollow in the lower axillary regions. The respiration is mainly thoracic, and the chest moves equally on the two sides, but the fifth and sixth interstices on each side are markedly retracted during inspiration. The lungs are hyper-resonant anteriorly, and the right lung shows evidence of considerable compensatory hypertrophy. It extends downwards to the seventh rib in the vertical nipple line, and in the middle line to the middle of the xyphoid cartilage. It crosses the middle line for more than two inches, the relative cardiac dulness being displaced to the left. Posteriorily the right lung extends downwards for two inches below the twelfth rib at the spine and to the eleventh rib in the mid-dorsal line. The left lung is hyper-resonant anteriorly and in the axilla, but the percussion note is deficient, with a trace of high-pitched tympanitis over the base posteriorly below the eighth rib.

The breast sounds over both lungs are relatively weak with a good deal of wheezing and a few crackling crepitations. While over the relatively duller area at the base, posteriorily, there are numerous medium and coarse crackles, and occasionally a little tubular breathing. There is no evidence of a cavity anywhere, neither is there any area of consolidation of the lung, or of dulness such as might be due to a localised empyema. If there be a cavity of any considerable size, it must be situated on the inner and posterior aspect of the left lung, between the lung and the spine and posterior mediastinum. The spine itself is resonant owing apparently to the right lung crossing the middle line somewhat. After admission, the patient expectorated daily from one-and-a-half to two pints of very foul smelling muco-purulent material, and his temperature ranged from 101° to 103°. He was treated with Ol. Terebinth. internally and creosote inhalation, and an endeavour was made to reach the cavity from which the fœtid expectoration was coming by means of a long exploring needle, but without success.

The temperature kept between 102° and 103°, and the amount of expectoration remained about 35 oz. per diem for a week or so, and the patient gradually got weaker. The left lower lobe then began to show signs of extensive breaking down, presumably by gangrene, and the patient rapidly sank, dying on the tenth day after admission.

This case is interesting owing to the clear history of the origin of the illness In view of his good health previously, of the sudden onset during physical exertion, and of the rapid attainment of a high degree of dyspnœa, together with pallor and faintness, there seems every reason to believe that the illness originated in an intra-thoracic hæmorrhage, and this diagnosis is made practically certain by his coughing up on the fourth day several pints of dark, altered blood.

As to the probable source of the hæmorrhage I would suggest one of the branches of the azygos vein near the root of the lung. Anyone who has seen the size that these veins sometimes attain in cases of latent cirrhosis of the liver, will not have any difficulty in understanding how such a hæmorrhage is possible. Indeed, the wonder is that in cases of cirrhosis with fully established collateral circulation rupture of the intra-thoracic veins is not of more frequent occurrence.

ACUTE TRANSIENT GENERAL ŒDEMA.

BY T. STACEY WILSON, M.D.,
HONORARY PHYSICIAN TO THE GENERAL HOSPITAL.

THE following history of a case of general anasarca is of interest, because it shews that symptoms which are usually indicative of grave constitutional disorder may occasionally be due to some trivial and transitory disturbance.

Mrs. W., aged 37, was seen by me on September 22nd because of extreme dropsy of the legs and feet, together with general malaise and weakness. She was taken ill two weeks previously with symptoms of gastric disturbance, vomiting in the mornings and immediately after food. For a day or two she could not keep anything down except biscuits. There was but little pain or discomfort and she was able to resume her work as a laundress after a day or so although the vomiting recurred occasionally. Ten days after the commencement of the gastric disturbance she noticed swelling of the legs and feet. This was on the Wednesday, the day before I saw her. On this morning she noticed no swelling of her legs or feet on getting up. She began working at 8 o'clock as usual but about 11 a.m. her legs and feet began to pain her and she found that the dorsum of each foot and both ankles were swelled; she had laced boots on at the time which were not laced up, only being fastened 'round the ankle, and the feet were so swelled that they bulged out through the opening. To use her own words "the foot was almost overhanging the toes when she took her boots off." By evening the swelling had spread up her legs to the knees. There were no other symptoms except the pain in the feet above mentioned. By next morning the swelling had extended and the legs and thighs were now so swollen that she could only walk with difficulty. She felt tired and languid and her legs felt very heavy, as indeed they were.

On this day, Thursday, I saw her about 11 a.m. She had a fairly healthy appearance. Face was of a good colour, and there was nothing to indicate that she was ill. The legs were, however, very greatly swollen. The ankles were twelve inches or more in circumference, and the legs were cylindrical in outline. The thighs also were greatly swollen, as were also the labia majora, but the swelling did not extend to the abdominal wall, or to the sacral or lumbar regions. The arms, chest and face were also free from swelling.

As to the character of the swelling, it was the ordinary soft dropsical swelling, such as is seen in nephritis or cardiac disease. The tissues were not tensely distended, and there was no hardness as in inflammatory œdema, and there was no redness or pain. There was no rash anywhere on the body or limbs, nor was there any itching. The tongue was fairly clean, and the patient was not feverish. There was no evidence of renal or cardiac disease. She could not be admitted to hospital, but arrangements were made to take her in next day, Friday.

By Friday morning, the third day of her illness, the œdema had spread to her face and arms, the eyelids being so swollen that she could not open her eyes at all. It was not till about 11 a.m. that she could see anything. The œdema of the legs was, on the other hand, decidedly less, and that of the vulva had gone.

On admission about noon she complained of a little pain in her loins and sacrum. The tongue was slightly furred with a dry centre. The temperature was nearly 100°. The pulse and respiration were quiet, and there we no symptoms of any serious constitutional disturbance. There was a slight functional murmur over the base of the heart, but otherwise the heart seemed normal.

The œdema subsided as rapidly as it came on, and by the sixth day none remained except a little puffiness of the face. There was not any marked diuresis such as might be expected in a cardiac or renal case, and she did not pass more than 30 oz. per diem. The cause of the œdema is obscure.

There was decidedly deficient action on the part of the kidneys and the urine was very scanty, 7 oz. and 30 oz. for the first two days, and 14 oz. and 30 oz for the next two days, and the urea was low, not more than 150 grs. per diem with the larger amounts of urine. Very careful exanination with centrifuge failed to show the presence of any cast, and there was no albumen. The urine was of normal colour and odour throughout, and the stools also were not abnormal.

This case is remarkable because of the extensive dropsy that existed without any special symptoms of ill health, and because, so far as we can see, this dropsy was a symptom of no importance whatever from the point of view of prognosis. As to its cause—I think we must consider it to have been of the nature of urticaria. The gastric disturbance ten days before the onset of the dropsy, together with some sick headaches after its subsidence, are compatible with this idea. We must not at the same time forget that a considerable amount of renal inadequacy existed at the time of the attack. The way in which the œdema spread upwards and began to subside in the feet while it was increasing in the face and arms, was suggestive of its not being due to organic disease, more especially as it began to decrease in the feet and legs before she took to her bed.

Up to the present time the patient has continued in fairly good health. There has been no return of the œdema nor has there been any attack of urticaria.

MEDICAL ABSTRACTS.

The Double Syndrome of Brown-Séquard in Spinal Syphilis.

By Dr. E. Brissaud.—(*Le Progrès Médical*, July 17th and December 18th, 1897).

LECTURE I.

The researches of MM. Lamy and Sottas have shown that a chronic meningo-myelitis is the most common form of syphilitic affection of the spinal cord, and the phenomena which result are to be explained from involvement partly of the nerve roots and partly of the cord itself. Provided that the lesion has attained a certain extent a paraplegia is observed, generally affecting the lower extremities only, eventually becoming spastic, and often involving the sphincters. The sensory troubles consist especially in the diminution or loss of heat and pain sensation, whilst, though simple tactile sensation is sometimes similarly abolished, in the majority of cases it remains intact.

This syphilitic paraplegia is not always bilateral. It is often enough unilateral, and in that case motion and sensation may be affected in two ways: sometimes both sensory and motor phenomena are associated in the same limb; sometimes the motor phenomena are observed in one limb and the sensory in the other. In the latter case the syndrome observed corresponds with that obtained by unilateral section of the cord; it is a spinal hemiparaplegia with crossed hemianæsthesia, or the "syndrome of Brown-Séquard." The syndrome is not always perfect, seeing that as before the hemianæsthesia commonly presents the "syringomelic dissociation."

Four varieties of affection can be recognised. In the first there is a bilateral paralysis of motion and sensation due to a bilateral lesion of the cord, and for each lower limb the affection of motion and sensation depends upon the lesion of the corresponding side of the cord. In the second the same condition exists, but is unilateral, motion and sensation being affected in the same limb. In the third variety there is paralysis of motion in one limb, and of sensation in that of the opposite side, corresponding to a unilateral section of the cord on the paralysed side. In the fourth the symptoms are the same as those of the first variety, but are due to a double spinal hemiparaplegia with double crossed hemianæsthesia—the anæsthesia being direct in each limb in the one case, crossed in each limb in the other. And although the clinical appearances are identical in the two cases, it is quite possible to distinguish between them in practice. Further, it is to be remembered that this double crossed hemianæsthesia will frequently show the phenomena of the syringomyelic dissociation.

Experimental section of the cord has shown the following results:—

1. Right hemiparaplegia is produced by a section of the right

half of the cord; therefore, the motor paths pass directly up the corresponding half of the cord.

2. Left hemianæsthesia is produced by a section of the right half of the cord; therefore the sensory paths cross more or less immediately the middle line.

3. Hemianæsthesia of the right side is produced by a section of the left half of the cord situated above the former right section; therefore the sensory fibres of the right side have already decussated below the first section.

It is true that accidental or criminal wounds of the human cord do not always give rise to such typical symptoms, but this is probably due to interference by the effused blood. The physiologist takes care to avoid the spinal arteries, and he thus eliminates the effusion whose irritant action complicates the effect of the section; for the clot does not stop short of the middle line, and before it is absorbed the effects of the section itself cannot be distinguished from those which follow a myelitis due to thrombosis. Hence the syndrome of Brown-Séquard is not invariably met with in cases of traumatism.

The following case affords a good example of the condition of double hemiparaplegia due to syphilis, and is one in which the diagnosis from that of ordinary paraplegia is clearly marked:—

The patient was a man, 41 years of age, who contracted syphilis in 1891. A year later he perceived on getting out of bed one morning that his left leg was paralysed, though he suffered no pain. On admission into hospital it was observed that his right leg was completely anæsthetic, a fact of which he was unaware. The latter point proves that the muscular sense was probably unaffected, according to the rule laid down by Brown-Séquard. During his residence in hospital the sphincter of the bladder became paralysed. Under treatment his symptoms gradually subsided, and he left the hospital able to walk, though still suffering from weakness of the left leg. In the following year, 1893, the left leg had become spastic, and the right leg was now paralysed, whilst on the left side there was now anæsthesia. His condition was then as follows:—

Motion.—On the left side spastic hemiparaplegia, with rigidity, exaggerated knee-jerk, ankle clonus, fibrillary twitchings without muscular atrophy, and cyanosis and coldness of the foot. On the right hemiparesis with slight exaggeration of the knee-jerk and feeble clonus; all the movements were retained, though diminished in amplitude and strength.

Sensation.—On the left side there was diminished sensibility over the whole lower limb, especially noticeable for heat sensations. This was somewhat less marked for sensations of cold and pain. On the right side, absolute analgesia and loss of heat and cold sensation, whilst tactile sensation was normal. The upper limit of the analgesia was situated at a higher level than that of the thermo-anæsthesia.

The maximum of motor loss on the right side, with the maximum of sensory affection on the left, were here due to the old lesion, whilst the less marked symptoms—again affecting opposite sides in motion and sensation respectively—are to be attributed to a later affection of the other half of the cord. The condition was thus one of double hemiparaplegia with double crossed hemianæsthesia.

The lesion in this case was probably a meningo-myelitis, and undoubtedly of syphilitic origin. Limited at first to the left half of the cord, it gave rise to the first syndrome of Brown-Séquard. Later, gaining the opposite side, the same lesion provoked the second set of symptoms. This diagnosis is supported by the fact that the upper limits of the anæsthesia on the two sides were very nearly at the same level. Moreover the early incontinence of urine shows that the first lesion was not strictly unilateral. That the lesion was not extra-spinal is shown by the absence of all painful symptoms, due, if they occur, to irritation of the sensory roots. Against the diagnosis of syringomyelia stand the following facts:—The illness began quite suddenly; specific treatment produced considerable improvement in the patient's condition; there were no trophic symptoms;

the early and sudden appearance of incontinence of urine, and its disappearance do not coincide with the diagnosis of syringomyelia. The diagnosis thus lies between a double gumma of the cord, or a bilateral ischæmia due to an arteritis obliterans But syphilitic tumours of the meninges or cord—especially of the latter—are very rare, and the diagnosis of ischæmia becomes the more probable of the two.

The question remains to be considered whether the diagnosis accords with the facts as at present known, that is, whether spinal syphilis is capable of producing a special variety of the syndrome of Brown-Séquard, in which the crossed hemianæsthesia takes on the form of the "syringomelic dissociation." This question can be answered by reference to the published observations, in which two types can be distinguished, namely, cases in which the syndrome is met with in its typical and complete form, and those in which it is incomplete as regards the anæsthesia. The latter cases are undoubtedly the more numerous.

Amongst the more remarkable observations of the first series may be mentioned that described by Charcot and Gombault in the *Archives de Physiologie* for 1873. The patient had contracted syphilis twenty years ago, and spinal symptoms had developed ten years later. At the time of observation the condition was as follows:—On the left side there was incomplete paralysis with hyperæsthesia of the whole lower limb. The muscular sense was partly abolished. On the right there was no paralysis, but the lower limb was insensitive to all stimuli, though those of contact were perceived. Voluntary movements and muscular sense were preserved. There was a zone of "*anæsthésie douloureuse*" at the level of the 3rd and 4th intercostal spaces, with several tender spots. *Post mortem*, a sclerosis of the upper part of the dorsal region was found, involving the whole of the left half of the cord, and both posterior columns, and the corresponding nerve roots were surrounded by thickened membranes and atrophied.

The second series of cases comprises a great number of observations, in which the following combination of symptoms is almost invariably noted:—The paralysis is most marked in one of the lower limbs, and certain troubles of sensation are observed in part or the whole of the opposite limb; cold, heat, and pain are not perceived. When the patients are examined at several months' interval, however, one may be astonished to find that the sensory symptoms have disappeared. The syndrome is therefore incomplete and transitory. The partial and transitory nature of the symptoms is accounted for by the fact that a meningo-myelitis may respect, and generally does respect, the posterior columns, which convey tactile sensations, and that an arteritis obliterans does not involve at once the whole of the white substance of the cord. The arterial anastomoses are innumerable, and the loss of function lasts only until the establishment of the collateral circulation.

LECTURE II.

In the cases of so-called syphilitic paraplegia, the crossed hemianæsthesia is, as already stated, generally incomplete, involving the loss of sensation of heat and pain without either loss or diminution of tactile sensibility. From the fact that the sensory disturbance thus represents a syndrome identical with that of syringomyelia, one may conclude with a fair amount of certainty that the posterior columns are spared. It has been granted that a meningo-myelitis is the most common form of spinal syphilis; and in order to explain the mechanism of the syringomyelic dissociation, the hypothesis of a myelitis due to gummatous infiltration, with or without cavitation, is still admissible, since it is, according to published observations, the most likely lesion to be found. Although, as has been stated, this process may sometimes overstep the middle line, it is easy to imagine it arrested in its course, and not only not passing beyond the middle line, but not even invading the posterior columns. Such a lesion would correspond in its results to a hemisection of the cord so arranged as to leave these columns—the conductors of tactile sensations—intact.

This limitation of the syphilitic lesion is easily explained on anatomical grounds. The two posterior columns are supplied by a single artery, which retains its independence in spite of frequent anastomoses with the arteries of the posterior nerve roots of both sides. Hence a syphilitic arteritis which, limited to a radicular artery, gives rise to a lesion of the whole of one-half of the cord at its own level, does not cause any tendency to thrombosis in the opposite half of the cord. On the other hand, when the lesion is bilateral, it is because the meninges themselves are primarily damaged, from which arise arterial lesions much more extensive and capable of giving rise to a complete transverse myelitis.

To return to the case of a unilateral lesion which, starting from the pia-mater and the arachnoid, leaves intact the posterior columns. This lesion, which has a certain extent from above downwards, which occupies the whole of the lateral column and encroaches upon the posterior horn, and perhaps on the anterior horn also, which has its point of origin in the meninges, themselves primarily infiltrated with a "sclero-gummatous" tissue—this lesion has a close resemblance, as far as its symptomatology is concerned, with a syringomyelia combined with hyperthropic meningitis. As to the connection between a chronic pachymeningitis and syringomyelia, whilst various authors have remarked that the latter condition presents sometimes the symptoms and course of a pachymeningitis, the writer (M. Brissaud) has demonstrated that in these cases the fact is not an accidental one, but due to anatomical reasons—that is, that the pachymeningitis, first in point of time, is the immediate cause of the syringomyelia, and it is clear that a hypertrophic pachymeningitis with unilateral syringomyelia, and a syphilitic meningitis with unilateral gummatous infiltration, must necessarily give rise to the same syndrome. For the parts of the cord which in the two cases undergo degeneration are exactly the same, namely, the meninges, the lateral columns, the posterior horns, and sometimes the anterior horns. The posterior columns are in both cases untouched.

But if a unilateral syphilitic meningo-myelitis gives rise to the syndrome of Brown-Séquard with thermo-analgesia, and if on the other hand this meningo-myelitis has a localisation comparable to that of a unilateral syringomyelia associated with pachymeningitis, does it not follow that such a syringomyelia should itself determine the partial syndrome of Brown-Séquard, that is, direct hemiparaplegia with crossed thermo-analgesia? This is undoubtedly most commonly the case. Just as syphilis produces sometimes a direct motor and sensory paraplegia, and sometimes a direct motor paraplegia with crossed thermo-analgesia, so does a syringomyelia in not a few cases. The question as to the cause of this variation in type has now to be considered.

In what follows, the fibres conducting pain and temperature sensations are supposed to run the same course in the cord. This is of course not strictly correct, but the paths are not far separated from one another, and for the sake of clearness they may be considered as identical. The fibres of tactile sensibility, on the other hand, take a totally different route.

In their upward course, the sensory fibres conducting pain and temperature sensations from the left side of the body leave the ganglia of the posterior roots and enter the posterior horn of the same side, where they end in a number of ramifications. To one of the terminal ramifications in each case corresponds one of the ramifications of a fibre whose prolongation gains the right, or opposite, lateral column, though the exact situation of the path remains yet undecided. Hence, given an incomplete unilateral section of the right half of the cord, not involving the posterior columns, the group of fibres conveying pain and temperature sensations from the left side of the body will be completely divided. Hence will arise a complete thermo-analgesia on the left side in the corresponding areas. Moreover, a small zone of anæsthesia will be present on the right side, corresponding to the fibres entering from the right which are directly involved in the lesion. If, instead of a section, a localised lesion, such as a tumour, be supposed to exist in the same position, a similar crossed thermo-analgesia will of course be produced; and since the crossed pyramidal tract is involved, the anæsthesia will be accompanied by a direct hemiparaplegia of the same side. Again, let the tumour be replaced by a myelitis of vascular origin—which has been shown to give rise to a similarly situated lesion—and it is evident that the clinical symptoms will remain the same. But if the lesion consist of a syringomyelic cavity limited to the right posterior horn, two possibilities need consideration :—

Imagine first that the cavity, strictly limited in vertical extent, occupies exactly the right posterior horn, at such a level as to involve the terminal ramifications of a set of fibres entering from the right side of the body. It is then evident that thermo-analgesia will exist in the corresponding areas of the right side. But if the vertical extent of the cavity be increased so as to involve a much larger vertical section of the posterior horn, it is still evident that thermo-analgesia will exist on the same side of the body as the lesion. Such is the hypothesis, confirmed by actual observations, to which the unilateral syphilitic lesion of the cord has been compared. Moreover, when this lesion—gummatous or gliomatous—reaches certain proportions, it will compress the fibres of the pyramidal tract of the same side, producing a direct spastic hemiparaplegia.

This explains the mechanism by which spinal syphilis gives rise to a direct hemiparaplegia with direct thermo-analgesia. To produce a *complete* total anæsthesia the lesion will have to extend beyond the horn into the neighbouring posterior column, a condition which, whilst it sometimes exists in syringomyelia, is much more commonly met with in syphilis.

Can, however, a unilateral lesion of the grey substance, whether due to syphilis or to syringomyelia, give rise to a crossed thermo-analgesia? This is certainly possible if the lesion of the grey matter extends from within outwards towards the areas in which run the heat and pain fibres. In this case it is necessary to suppose that the lesion is of slight vertical extent, for if it occupies a large extent of the grey substance of the posterior horns, it involves, as already shown, a direct thermo-analgesia. If, on the other hand, the lesion involves the posterior horns for a considerable extent, and also reaches the path for the fibres conducting pain and heat sensations on that side of the cord, then the two conditions considered will coexist and there will be a double bilateral thermo-analgesia. In such cases as this the thermo-analgesia is more pronounced on the side of the lesion, being incomplete on the opposite side on account of the escape from destruction or compression of some of the fibres in their course in the lateral column. But the anæsthesia has a greater vertical extent on the opposite side, because the whole of the fibres coming from the areas below the level of the lesion pass through the damaged area of the cord.

Thus, a unilateral lesion of the grey substance, capable of producing at first a direct thermo-analgesia, is also capable of producing a secondary crossed thermo-analgesia, and thus a complete thermo-analgesia.

A good example of the production of bilateral troubles of sensation by a unilateral lesion of the cord is to be found in a case published by MM. Déjerine and Sottas. The illness began at the age of 53, with muscular atrophy of the right upper limb, and especially of the hand. Tactile sensation was normal, but heat and pain sensation was abolished in the whole of the right upper limb and the right half of the thorax. The same-anæsthesia existed, though in a slighter degree, over the whole remaining cutaneous surface, with the exception of the neck, face, and head. *Post mortem*, a gliomatous cavity was found occupying the right half of the cord from the second cervical nerves to the upper part of the lumbar enlargement.

One more proposition remains to be proved, namely, in bilateral sensory and motor paralysis, the motor troubles are always symptomatic of homologous lesions, but the sensory symptoms are sometimes due to homologous, sometimes to crossed lesions; and in the last case the double sensory and motor paralysis constitutes a double syndrome of Brown-Séquard.

A case reported by Hanot and Meunier makes very evident this relation of the syndrome with a double spinal lesion :—

A man, 42 years of age, who had contracted syphilis three years ago, was seized with an apoplectiform stroke, which left him paraplegic. The paralysis was absolute in the lower limbs, and there was some degree of weakness in the left arm. The sensory paralysis consisted of a complete thermo-analgesia of the two lower limbs and of the whole of the trunk as far as the axillæ, with an area of tactile anæsthesia affecting the middle part of the trunk. The anæsthetic areas were limited above by two small bands of hyperæsthesia, or rather by two half-bands, the right half-band occupying a higher level than the left. The patient suffered from acute pain between the scapulæ. Death occurred on the eleventh day. ***Post-mortem*** there was a double gumma of the cord in the cervico-dorsal region, with meningitis and localised myelitis at the circumference of the gummatous mass.

The motor paraplegia was here due to compression of the lateral tracts, and the different levels of the thermo-analgesia on the two sides shows clearly that the condition was one of double crossed hemianæsthesia.

JAS. W. RUSSELL.

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

PATHOLOGICAL AND CLINICAL SECTION.

The sixth meeting was held in the Medical Institute, on Friday, April 28th, at 8 p.m., the President, Mr. JORDAN LLOYD, in the Chair.

The following Officers were elected for the ensuing Session :— As President, Henry Eales, M.R.C.S.; as Hon. Secretaries, J. H. Clayton, M.B., and T. Sydney Short, M.D.

Hydatid of Lung.—Mr. Gamgee showed a patient who had been the subject of hydatid cyst of the upper part of the right lung. The treatment had been incision and drainage of the cyst without any resection of ribs. About two pints of fluid came away at the time of operation. The parietal and visceral layers of the pleura were adherent, and so the general pleural cavity was not opened. The patient made a good recovery.

Trichorrhexis Nodosa.—Dr. Killick Millard showed a rare affection of the hairs of the scalp in a child, believed to be a variety of the disease first described by Kaposi as Trichorrhexis Nodosa. The patient, a boy aged 7 years, was suffering from a number of patches on the scalp, the hairs in these places being dry, lustreless, and readily pulling out, and the skin being scurfy but showing no tendency to eczema. Under the microscope the affected hairs showed alternate swellings and contractions, the latter being the most marked feature. There was no tendency towards breaking off, or of fraying out to produce the so-called "inter-locked brushes" appearance. The bulb was markedly atrophied. No fungous or other parasitic growth could be detected. The affection had persisted for 12 months and had gradually got worse. The treatment adopted had been the application of such ointments as Ungt. Sulph., Ungt. Hydrarg. Amm., and Ungt Hydrarg. Ox. Flav. No cause for the disease could be discovered, either constitutional or local, the child's health being otherwise good. No other member of the family was affected.

Papillomata of Larynx.—Dr. Lamb showed a case of multiple papillomata of the larynx, upon which he had operated. The patient, a married woman of 33, had been unable to speak except in a hoarse whisper for twenty-one years, ever since an attack of measles. Her general health was bad; she was thin, weakly, and at times suffered from attacks of dyspnœa, lasting a few days. Last summer she had an attack so severe that her life was only saved by the prompt performance of tracheotomy and artificial respiration by her medical attendant, Dr. Beilby, of Bromsgrove. When the larynx was examined shortly afterwards, the false cords and arytenoid folds were seen to be swollen and œdematous. This swelling subsided somewhat for a time, but the false cords remained much enlarged and gradually assumed a characteristic papillomatous aspect. There was also a projection from the posterior wall.

As the suggestion of thyrotomy was not favourably entertained, Dr. Lamb removed the false cords with the galvano-caustic snare, thus bringing into view a broad fringe of sub-glottic papillomatous growth. This was removed with the curette; and concentrated lactic acid applied to the base, which consisted, in parts, of extremely tough leathery tissue, presumably hypertrophic. Adduction of the cords was very imperfect for some time after the mechanical obstacle had been removed, but latterly the patient had recovered a fairly good voice. For the last three months treatment had consisted in the occasional application of 10 per cent. salicylic acid in alcohol. In spite of this, some recurrence had taken place at the anterior commissure and at one spot below the glottis. It was hoped that this tendency might be overcome without resorting to thyrotomy. The general health had improved enormously.

Irregular Ataxia.—Dr. Douglas Stanley showed a female child, aged 2½ years, who possessed no sense of vision. The patient was born at term and the labour was natural. When some months old she had convulsions. The mother observed that she never at any time seemed to take notice of objects or persons, nor did the patient ever learn to stand alone or speak. Examination showed that although the pupils were reactive there seemed to be no visual power. There was marked nystagmus, chiefly rotatory. The reflexes, though present, were feeble. The patient seemed unable to stand. The probability of a congenital malformation was discussed.

Dr. Stanley also showed a male patient, aged 7½ years, who suffered from inability to walk except in a jerky uncertain manner. There was indistinctness of speech, nystagmus, and exaggeration of tendon jerks. The case was considered to be one of insular sclerosis.

Trephining for Head Injury with Convulsions.—Mr. Morrison showed a girl, aged 2, whom he had trephined for convulsions with hemiplegia occurring immediately after a severe injury of the head.

Kidney removed by Lumbar Nephrectomy for Pyo-nephritis and Peri-nephritic Inflammation.—Mr Barling showed this specimen from a woman aged 48. A large tumour occupied the right loin, and anteriorly extended to the umbilicus in the middle line, and downwards to an inch below the crest of the ilium. There was no pus or abnormal constituent in the urine, and the diagnosis lay between a kidney with plugged ureter, and a distended and suppurating gall-bladder. The former diagnosis having been made the organ was removed through the loin, and though the peritoneal cavity was widely opened in the separation of the organ a good recovery followed. There was no cause evident for the suppuration in the kidney, but the probable explanation appeared to be calculus which had escaped and lodged in the ureter.

Lumbar Nephrectomy for secondary hæmorrhage following the removal of a renal calculus.—Mr. Barling showed this specimen removed from a boy aged 17. There was a typical history pointing to stone in the kidney, and the calculus was removed by an incision through the substance of the kidney at its lower end, the incision radiating from the pelvis towards the external border of the organ. The kidney tissue was cut through because the stone was so impacted in the calyx that it could not be brought down into the pelvis for removal. The bleeding from the incised kidney was very free, but it readily ceased on the application of four deep catgut sutures which closed the incision, and at the end of 48 hours there was no longer any blood in the urine. The lumbar wound healed in a few days, but on the eighth day after the operation a large quantity of blood reappeared in the urine. This severe hæmorrhage continued uninterruptedly for sixteen days, except for two short intermissions when the ureter was plugged with clot. The patient was so reduced and anæmic from the hæmorrhage that it was considered dangerous to let him go on longer, and the kidney was removed by re-opening the former incision. In endeavouring to strip it out of the peri-nephritic tissues there was a good deal of oozing, and the peritoneum was opened. It was deemed therefore better to strip it out of its capsule, which was very quickly effected, and to save time and any possible further loss of blood and because of the difficulty of making a tieable pedicle, the vessels were clamped and the kidney cut away. The clamps were removed on the fifth day and the patient made a good recovery.

At the operation it was found that the surfaces of the incision in the kidney had healed completely, and that the hæmorrhage came from a vein about the size of a radial vein which ran just beneath the mucous membrane of the pelvis in the long axis of the organ, and which had been incompletely divided at the time of the operation.

Empyema af Antrum.—Dr. Lamb showed an anatomical preparation illustrating the spontaneous cure of empyema of the maxillary antrum. The points were (1) A carious second molar tooth, firm in the socket (2) A depressed and pitted cicatrix occupying the whole length of the middle meatus, but most marked at its anterior part just below the middle turbinal; evidently the result of a localised chronic atrophic rhinitis. (3) Projecting upwards from the floor of the antrum a cylindrical tube of bone about 3 mm. in length and the same in diameter. This tube leads down into the top of the socket of the palatal fang of the carious second molar. When the antrum was opened this little tube was completely covered with mucous membrane and was sticking up like a peg into the cavity of the antrum. The carious molar had been roughly filled with amalgam packed in on the top of some cotton wool. The suggested interpretation was as follows:—(1) Dental caries causing purulent infection of the antrum and leading to the establishment of (2) chronic empyema which lasted probably for years, overflowing in the usual way through the ostium maxillare into the middle meatus and causing a local atrophic rhinitis, as evidenced by the depressed and pitted cicatrix. (3) The formation of a carious opening in the floor of the antrum, and the drainage of the cavity through this opening and the fang or socket of the carious molar. During this process new bone was deposited round the opening and the little bony tube was gradually built up. (4) The cure of the empyema; the covering of the end of the tube with mucous membrane, and the filling of the tooth.

Sarcoma of Vagina.—Mr. Smallwood Savage showed a microscopical specimen of a portion of a vaginal growth. The patient, aged 60, had had a thin blood discharge for eight months, and on examination there was a sessile tumour on the posterior wall of the vagina and situated about three-quarters of an inch from the vulva, which was the size of a tangerine orange, soft, friable, and bleeding readily. The surface of the tumour was ulcerated. The cervix and upper part of the vagina were quite free. The patient was much blanched when seen and died a fortnight later. The microscopical section showed round and oat-shaped cells.

Pan-hysterectomy.—Dr. Purslow showed two Fibroid Uteri removed by Pan-hysterectomy. The first specimen was taken from a woman aged 37, mother of one child, married, but separated from her husband, and earning her living as a cook. She was sent to Dr. Purslow by Dr. Irvine, of Selly Oak, on account of having had frequent attacks of retention of urine and of abdominal pain, due to the presence of a fibroid tumour the size of a cocoanut. These symptoms had been increasing in severity and had compelled her to give up her situation, and she was very anxious to have something done.

At the operation the bladder was found, although empty, to extend to the summit of the tumour, one inch below the umbilicus, the tumour having developed in the anterior wall of the uterus and carried up the bladder in its growth. Patient made a good recovery and has now resumed her employment.

The second specimen was taken from a single woman, aged 39, who had suffered severely from menorrhagia for about two years, and was very weak and anæmic. The uterus was enlarged by a fibroid to the size of a fœtal head. This patient made a good recovery and is now back at work.

In both operations, which were performed in the Queen's Hospital, the patient was first placed in the lithotomy position and the cervix separated as far as possible from its connections from below; a vulsella was left on the anterior lip as a guide in the second stage of the operation, which was performed through an abdominal incision.

Tumour of Scapula.—Mr. Jordan Lloyd showed part of the left scapula removed from a lady aged 25 years. She had been under treatment for supposed lateral curvature of the spine; an error in diagnosis explained by the backward projection of the lower angle of the scapula caused by the presence of the tumour on its central aspect. The prominent scapula had been noticed for more than a year and was increasing. On careful examination by lifting the scapula away from the ribs the growth could be felt by the examining fingers. The tumour was removed by ⊣-shaped incision; the vertical limb over the inner border of the bone, and the horizontal over its spine. The muscles were cut through from behind quite close to the bone, which was then divided just below the spine with a Hey's saw. Bleeding was very free. The tumour is almost as large as the palm of an adult hand; somewhat circular in shape and nearly an inch in thickness, and is probably a chondro-sarcoma.

REVIEWS.

GENERAL PHYSIOLOGY.*

THERE is a certain tendency among students of physiology to regard that branch of Natural Science from a somewhat restricted point of view, namely, vertebrate or even mammalian. This applies particularly to the student of Human Physiology who, at an early date, gets into the habit of referring everything to the standard of the body and functions of man. Physiology in the original meaning of the words and its roots had no such limitation. To correct this in some measure, the term Biology has been introduced to cover all that to which, in truth, the term physiology should apply. Max Verworn teaches that all the various forms of life should be studied together and under the one heading.

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* General Physiology—An Outline of the Science of Life. By Max Verworn, M.D. Translated by Frederick S. Lee. London: Macmillan & Co.

In so doing many vital phenomena come to be known, from a very different standpoint that larger conceptions of formation are obtained than would otherwise be the case. "Animals and plants (p. 3) exhibit vital phenomena, and it may be asked whether these latter are the same as or different from the phenomena that prevail among men. It is evident that all living organisms must be included in the sphere of physiological investigation, the flower and the worm equally with man." From this we see at once the scope of the writer's work. He takes different functions and reviews their comparative physiology.

The physiology of the cell—a subject on which so much has already been written is, as might be expected, the first subject dealt with. The various forms of multiplication, the structure of the nucleus cell, nutrition and metabolism, are studied in the same general aspect, and the varied forms of vital energy, heat and light are shown both in their differences and their similarities. One of the most interesting divisions of this chapter (Elementary Vital Phenomena) is that dealing with Adaptation. Though it is especially biological in its tone, still we must admit the force of its suggestions as bearing on the subject of physiology in general. So with the subject of Ontogenetic Developments. To Darwin and Haeckel our present knowledge of development owes its rise and probably none will deny that embryology as a special branch of biology is of so much importance, that in the words of the author: "No biologist or physician who has not become a blind specialist, is unequipped with embryological knowledge."

In this chapter, which covers such a wide range of phenomena, are considered the subjects of movements, electrical stimulation, heat production and regulation. Some most interesting observations are given on the subject of movements and their suspension by means of narcotics; thus the investigations of Biaz on the influence of quinine in amœbine movements, and those of Engelmann on ciliary motion as affected by ether and chloroform, are supplemented by many others. The addition of chloroform to the water in which the *stentor cæruleus* is found produces paralysis of the myoids. There may be a primary excitation at the beginning as shown by a sudden twitch of the whole organism, but in a very short space of time the stentor passes into a condition of narcosis with no longer any movements of the cilia nor any response to stimulation of any kind. This state of torpor may pass off on transferring the specimens to water free from the chloroform. Another very interesting experiment is that quoted from Nassart, who was able to completely abolish the development of light in *Noctiluca* by exposing them to the vapor of alcohol. The action of narcotics on the ganglion cells of the central nervous system in the higher animals and man is, the author thinks, of an identical nature, and the fact observed by several that the protoplasmic processes thrown out by various simple organisms beome actually altered in shape is one of much interest and importance. It shows that the whole vital condition of the cell is altered, and when we remember the long processes of nerve cells, it ceases to be matter for surprise that they lose their functions in the presence of opium, alcohol, or chloroform. In point of fact the dendrites of the cortex cells of dogs become moniliform in the presence of morphia or chloral in much the same manner as observed in the rhizopods.

One of the most interesting chapters in this work is that dealing with the comparative physiology of reflex action. It is at once surprising and instructive to note the various gradations as we ascend the animal scale, and probably no better method could be followed for obtaining a deep insight into this subject.

From these abstracts some idea will be conveyed of the broad and philosophic tone of Verworn's work on General Physiology. It is one of undoubted value, presents many subjects in a totally new light, and in a manner which cannot fail to strike the general reader as well as the scientific.

ON THE PRINCIPLES WHICH GOVERN TREATMENT IN DISEASES AND DISORDERS OF THE HEART.*

THE Lumleian Lectures delivered by Sir Richard Douglas Powell before the Royal College of Physicians in 1898, and published in the medical journals, attracted much attention by their eminently practical treatment of a difficult, though well-worn subject. The lectures are not strikingly original, for there is but little room for originality in the treatment of diseases and disorders of the heart; but they bring together clearly and intelligibly the principles on which the choice of treatment in such cases should depend. Any attempt to teach the treatment of heart disorders according to rational principles must be welcomed by the profession, for perhaps more unintelligent and haphazard use of drugs is to be seen in this department of medicine than in any other.

The lectures are three in number The first deals with the functional aspect of the matter—not only, that is, with the entirely functional cardiac disorders, but also with those conditions of organic origin in which subjective sensations of one sort or another play a leading part in the group of symptoms, and to which the name cardio-vascular hyperæsthesia is applied by the author. Of these cases, three degrees or stages are described. The first consists of that "undue appreciation of the heart's action and the blood circulating through the vessels," which is common in nervous and introspective individuals, and in which the heart's action, though usually normal, is easily upset by slight causes. The second degree is that "in which the heart's action is really oppressed to a point varying from a mere vague anxiety to a positive discomfort and onwards to the third degree, the acute suffering of angina." Increased arterial tension is a prominent factor in the cases of the second and third degree. The distinction between the various groups is often a difficult matter in practice, yet an all-important one from the patient's point of view; for the most careful adaptation of treatment is essential. But beyond doubt a study of these lectures will be of no small assistance in this direction. The first lecture ends with a consideration of the cases of heart hurry and its reverse.

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* On the Principles which govern Treatment in Diseases and Disorders of the Heart. By Sir Richard Douglas Powell, Bart., M.D. Lond., F.R.C.P., Physician in Ordinary to Her Majesty the Queen, Physician to the Middlesex Hospital, etc. London: H. K. Lewis. 1899.

The second Lecture is taken up with the consideration of the inflammatory affections of the heart and valves, and their subsequent results The author is here treading upon more familiar ground, but again, a careful study of the various conditions and their indications for treatment is forthcoming. There is no more important part of the book than that which insists on the danger of impatient treatment in rheumatic fever, and we venture to think that such teaching on this point is not unnecessary at the present time. There is undoubtedly a tendency to regard the drop in temperature due to the administration of salicylates as signifying the end of the disease, and, as the author insists, the result is in many cases permission to the patient to get up out of bed at a time when in reality the rheumatic poison is still active within him. Hence, no wonder that the efficacy of the salicylates in diminishing heart lesions after rheumatic fever is denied by many observers. An equally important point is the liability of the still softened valves to yield, if too early subjected to strain. The present writer has observed the sudden onset of permanent aortic regurgitation following the resumption of somewhat heavy work shortly after an attack of rheumatic fever.

The third Lecture takes into consideration various matters, especially the use of systematic exercises in heart affections, acute heart failure in pneumonia and other conditions, heart overstrain in youth, and some points in connection with ulcerative endocarditis. Special attention may be drawn to the author's belief that defective sanitation is competent to induce malignant infection of a recently damaged valve, and his suggestion as to the necessity for the exercise of care in the choice of the surroundings amongst which the period of convalescence from rheumatic fever shall be spent.

THE TREATMENT OF LATERAL CURVATURE OF THE SPINE.*

It is now ten years since the first edition of this book was published, and Mr. Roth has taken advantage of the issue of a second edition to rewrite and rearrange the book and to add an appendix containing an analysis of 1,000 cases of lateral curvature of the spine treated by posture and exercise alone. The author is a strong advocate of the treatment of scoliosis without mechanical supports, and it is evident, from the details of his cases, that his method of treatment is most successful. As the pathology and causation of scoliosis come to be more thoroughly understood, fewer and fewer surgeons, we are sure, will be found to rely upon mechanical supports in their treatment of the condition, and more will be found to rely upon treatment by well directed exercises and movements. While agreeing, therefore, with Mr. Roth's main contentions, we cannot help looking upon the exercises prescribed by him as being quite unnecessarily complicated, and also we cannot go so far with him as to say that complete rest on the back for some time during the day is useless and even harmful. Weak muscles, to regain their power, must be duly exercised, but they must also have their periods of rest, and it seems to us that the treatment of scoliosis by the combination of exercises and recumbency rests on a sound physiological basis.

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* The Treatment of Lateral Curvature of the Spine. By Bernard Roth, F.R.C.S. Second Edition. Pp. 141. London: H. K. Lewis. 1899.

Mr. Roth has had great experience of the diseases about which he writes, and his book is well worth careful reading. We notice that the author inserts extracts from the letters of patients and their friends, of which the following are examples:— "I am pleased to tell you that my dear daughter is very much better for the three months' treatment under your care. . . . I was truly delighted for her to leave off that wretched instrument, which had been made for her by the order of the surgeon she had previously been to." And again: "Your treatment has certainly done me an immense deal of good." The insertion of testimonials of this kind in an advertisement of a patent medicine does not surprise us, but their insertion in a medical or surgical work is, to say the least, a practice open to great objection.

THE AMERICAN YEAR-BOOK OF MEDICINE AND SURGERY.*

We have again to call attention to the full and excellent account of the year's progress in medicine and surgery contained in the American Year Book. The work during the past year has been carried out mainly by the same hands as before, the most important change consisting in the retirement of Dr. William Pepper from the post of senior editor of the department of General Medicine. The general plan therefore remains unaltered.

The book is divided into eighteen sections, each under the management of one or two editors. Each section is preceded by a short review of the work of the year, in which special stress is laid upon those of its features which the editors consider most important. The editorial functions, however, are not with this exception entirely confined to that of abstracting the numerous papers noticed, for concise criticisms are freely interspersed in the text, with distinct gain to its value.

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* The American Year Book of Medicine and Surgery. Under the General Editorial Charge of George M. Gould, M.D. London: The Rebman Publishing Company Limited. Philadelphia: W. B. Saunders. 1899.

We have in previous notices expressed our high opinion of this work, and the present volume fully maintains its standard.

THE THERMAL WATERS OF BATH.*

This is a description of the various systems of bathing, massage, and allied methods as practised at Bath, a subject on which the author is fully competent to speak. Much that is of historical and geological interest is also given, but the chapters which are perhaps of most importance are those dealing with the technique in vogue at the different establishments. The book will well repay perusal by any who think of sending patients to Bath for treatment.

PUBLISHERS' DEPARTMENT.

New Inventions, Drugs, etc.

Messrs. Burroughs Wellcome and Co. have forwarded samples of Tabloids of Effervescent Artificial Vichy Salt, Carlsbad; Sodium Sulphate, and Caffeine Citrate, which appear to us as a very convenient form of administering these substances. From trials which we have been able to make we find them exceedingly satisfactory.

From the same firm we have samples of Aloes and Iron Tabloids. These strike us as being too large to be comfortably taken. Their Colocynth Compound Tabloid is however free from this objection and should be useful.

Messrs. Park, Davis and Co. send samples of "Corrective Tablets," containing Mercuric Chloride gr. 1-20, Pulv. Ipecac. gr. 1-50, with Soda and Bismuth. Another containing Euonymin and Podophyllum, "Hepatic," Sodium and Calomel Tablets, and another named Cubeb Compound. This latter seems a convenient form in which to administer Cubebs.

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* The Thermal Waters of Bath. By Gilbert A. Bannatyne, M.D.

New Books, etc., Received.

From Cassell and Co.—
Materia Medica and Therapeutics. By J. MITCHELL BRUCE.

From James Maclehose and Sons, Glasgow—
Chemical and Microscopical Aids to Clinical Diagnosis. By CARSTAIRS C. DOUGLAS, M.D., B.Sc.

From F. A. Davis Company, Philadelphia—
An Epitome of the History of Medicine. By ROSWELL PARK, M.D. Second Edition.

The Anatomy of the Central Nervous System of Man and Vertebrates in General. By LUDWIG ECLINGER, M.D.

Sajous's Annual and Analytical Cyclopædia of Practical Medicine. Vol. iii.

From Oliver and Boyd, Edinburgh—
Anæmia and Diseases of the Blood-forming Organs and Ductless Glands. By BYRON BRAMWELL, M.D.

From Kegan, Paul, Trench, Trübner and Co.—
Bradshaw's Dictionary of Bathing Places and Climatic Health Resorts.

From Young J. Pentland—
The Murmurs of Mitral Disease. By E. M. BROCKBANK, M.D

From J. Wright and Co., Bristol.
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In the Harben Lecture, delivered on November 7th last, the Lecturer (Sir Richard Thorne, K.C.B.) stated that there had been a very heavy increase in that form of *Tuberculosis in which the infection is received into the alimentary canal* instead of the lungs, and that this increase had gone hand in hand with a steady increase in the consumption of cow's milk as a food in this country. The danger to man, and especially to our infant population, was one of real gravity, and the *loss of child life due to this disease in milch cows was appalling*. Finally he most strongly urged that English people should be educated to acquire the habit of *sterilizing their milk* before using it.—*Vide* BRITISH MEDICAL JOURNAL, *Nov. 12, 1898.*

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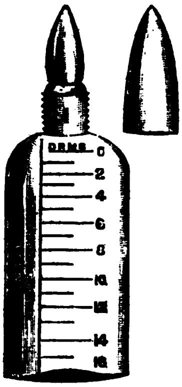

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In the Harben Lecture, delivered on November 7th last, the Lecturer (Sir Richard Thorne, K.C.B.) stated that there has been a very heavy increase in that form of *Tuberculosis in which the infection is received into the alimentary canal* instead of the lungs, and that this increase had gone hand in hand with a steady increase in the consumption of cow's milk as a food in this country. The danger to man, and especially to our infant population, was one of real gravity, and the *loss of child life due to this disease in milch cows was appalling*. Finally he most strongly urged that English people should be educated to acquire the habit of *sterilizing their milk* before using it.—*Vide* BRITISH MEDICAL JOURNAL, *Nov. 12, 1898.*

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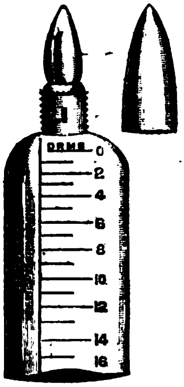

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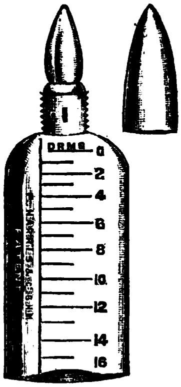

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